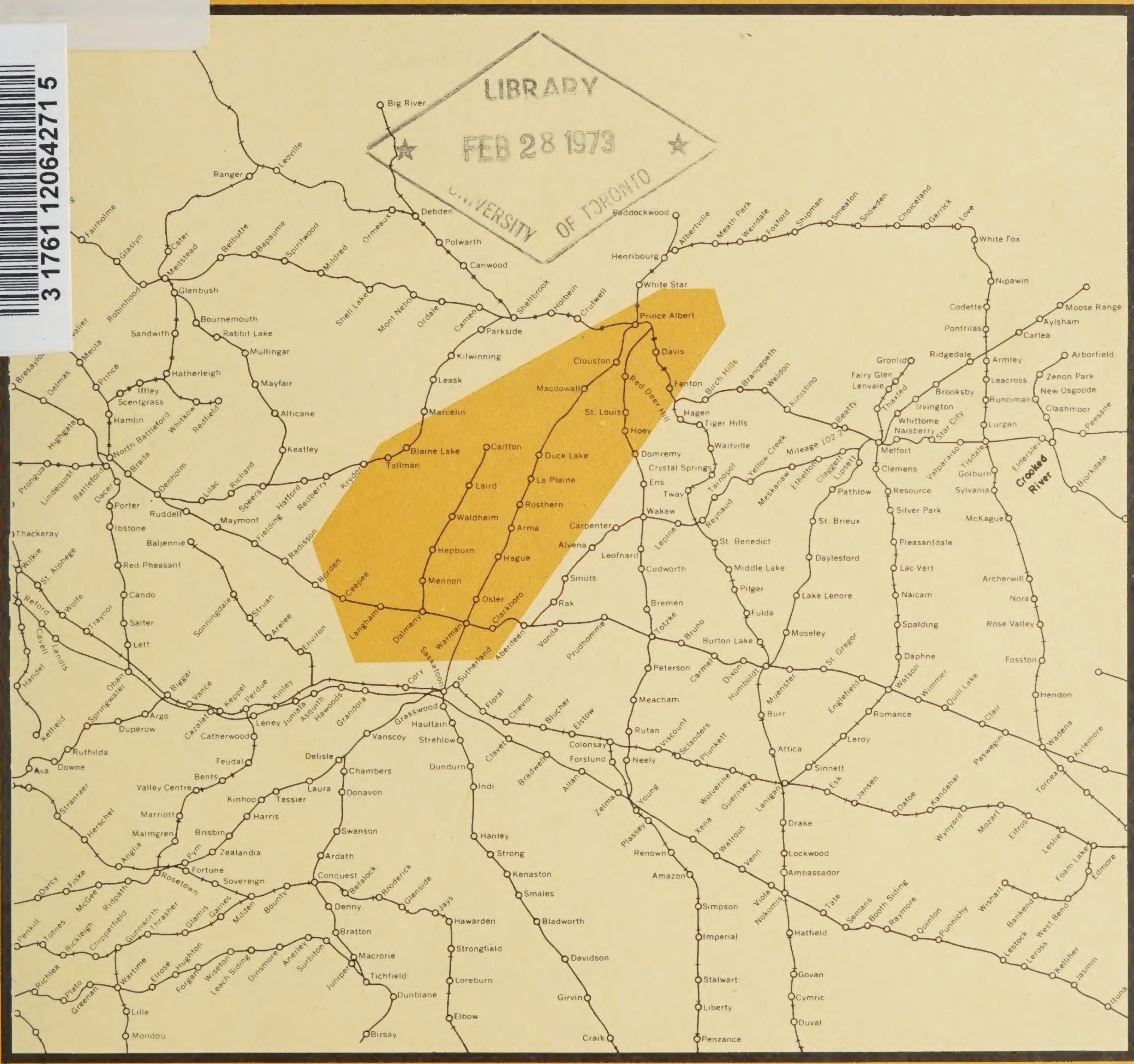
PRAIRIE REGIONAL STUDIES IN ECONOMIC GEOGRAPHY No. 10

THE ROSTHERN REGION OF SASKATCHEWAN



Agriculture Canada

Dept. Economics Branch

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THE ROSTHERN REGION OF SASKATCHEWAN

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1. The Riverhurst Region of Saskatchewan by A.W. Burges, Geographical Branch, Department of Energy, Mines and Resources; and J.W. Channon, Economics Branch, Canada Department of Agriculture. (Supplement to Riverhurst Regional Report, September, 1967)

2. The Boissevain Region of Manitoba by J.W. Channon, D. Zasada and R.T. Miller, Economics Branch, Canada Department of Agriculture.

3. The Rockglen Region of Saskatchewan by J.W. Channon, D. Zasada and R.T. Miller, Economics Branch, Canada Department of Agriculture. Pub. No. 69/11, August, 1969.

4. The Camrose-Vegreville Region of Alberta by J.W. Channon and D. Zasada, Economics Branch, Canada Department of Agriculture. Pub. No. 69/16, November, 1969.

5. The Weyburn Region of Saskatchewan by J.W. Channon, H.R. Fast and D.A. Neil, Economics Branch, Canada Department of Agriculture. Pub. No. 71/4, May, 1971.

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8. The Brandon-Neepawa Region of Manitoba by J.W. Channon and K.J. Morison, Economics Branch, Agriculture Canada. Pub. No. 71/15, March, 1972.

9. The Cardston Region of Alberta by J.W. Channon and K.J. Morison, Economics Branch, Agriculture Canada. Pub. No. 72/3, July, 1972.

10. The Rosthern Region of Saskatchewan by J.W. Channon, H.R. Fast and D.A. Neil, Economics Branch, Agriculture Canada. Pub. No. 72/6, October, 1972.

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PREFACE

Bill C-120 was given first reading in the House of Commons on September 14, 1964. This was the first attempt to implement the recommendations of the MacPherson Royal Commission on Transportation. It never became law as the twenty-sixth parliament was dissolved before the bill passed through the Commons. That bill would have established the Branch Line Rationalization Authority, responsible to the Minister of Agriculture.

Bill C-231, which succeeded Bill C-120, was given first reading on August 29, 1966 and subsequently became what is now in the statutes as the National Transportation Act, R.S.C. 1970 Ch. N-17. This bill established the Canadian Transport Commission, comprising several committees, including the Railway Transport Committee. This latter committee was allocated the responsibilities which would have been given to the Branch Line Rationalization Authority. The Railway Transport Committee is responsible, through the Canadian Transport Commission, to the Minister of Transport. Accordingly the Minister of Agriculture now has no direct authority in the field of branch line abandonment. However, because of the responsibilities of the Canadian Grain Commission in regulating the grain warehouse industry, the Minister of Agriculture has a direct interest in the impact of branch line rationalization on this railway-related industry. He also is concerned, of course, with the effects of such changes on the welfare of western grain producers.

Prairie Regional Studies in Economic Geography had their origin in work carried out for the Minister of Agriculture, beginning in February 1964. Later that year Mr. A.W. Burges began a study of the prairie branch line network for the Department of Mines and Technical Surveys. It seemed logical and economical to merge the two. This was done and the Riverhurst Report became No. 1 in the series of Prairie Regional Studies. The present report on the Rosthern region of Saskatchewan is No. 10 in this series.

The geographic area denoted by "Rosthern region" is comprised of the grain-growing areas, or hinterlands, served by 20 delivery points. These are first listed in Table 1.1 and again in subsequent tables as required. The factors given consideration when delineating a study region for purposes of this series include the following: (1) the region must be a manageable size; (2) the region must encompass one or more "problem" areas with regard to grain marketing; (3) an attempt is made to draw a line around the region such that no communities outside the region would be affected by the rationalization hypothesized in the study in terms of grain delivery patterns, i.e., if possible no community is to be in more than one study region; and (4) the region and the problem areas are to be based on the railway network and country elevators existing at the time of delineation.

As noted in the previous reports, the emphasis is on grain farms and the communities and facilities serving these farms. The tabular data and their accompanying text, figures and map describe the socio-economic activity of the region. It is hoped that this information will enable the reader to gain an appreciation of the relative importance of the farms and

communities in the Rosthern region, and having done this be in a better position to assess the impact of proposed programs and contemplated changes in the infrastructure of the region.

It is readily admitted that the data contained in this report do not constitute an exhaustive coverage of all the parameters. The material being presented is intended to help those individuals and firms affected by changes to understand the rationale of any changes in grain collection and distribution, some of which have been under way for some years. Undoubtedly this will intensify over the next few years as inflationary pressures work on the cost structures of the grain production industry, the elevator industry and the railways.

This report is organized into five major parts, the first being a description of the communities themselves. The following community attributes are described: available services, population, school enrolment, postal activity, property tax assessment and transportation services. The second part describes some grain production characteristics of the region including soils, meteorological data, land values, land use, crop yields, protein content, and farm sizes and tenure. Descriptive material contained in the third part focuses on the grain marketing and handling system as it relates to the delivery points. Among other things, this includes data on the number and capacity of grain elevators, number of permit holders, grain elevator receipts, quota base, grain prices and farm to elevator grain hauling activity.

Part IV attempts to show what changes might be expected if some of the delivery points closed. It is a hypothetical exercise in which the hinterlands of certain delivery points assumed closed are diverted and added to neighboring delivery point hinterlands. Estimates are made of acreages, bushels and number of permit holders gained by delivery points remaining open, and of increased hinterland size and hauling distances.

Finally, the last part briefly describes some of the activities of the three main regulatory bodies regulating the grain industry in Canada. These are the Canadian Grain Commission, the Canadian Wheat Board and the Canadian Transport Commission. For added perspective a chronology of grain-oriented legislation and events is appended.

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PART I

COMMUNITY ATTRIBUTES

Classification of Communities

For purposes of this study, the method of community classification is based on a modification of the system devised by the Saskatchewan Royal Commission on Agriculture and Rural Life.[1] The criteria used for classifying and ranking the communities in this study were number of service activities present and population. First, communities were classified by number of services into five categories: namely, "Too Small to Classify", "Hamlets", "Villages", "Towns", and "Greater Towns". Then, if two or more communities had an equal number of services, they were ranked by population. Prince Albert was placed in a sixth category "Cities" by virtue of its large number of services and its large population.

This method of ranking is not perfect. For instance, it ignores dollar-volume of retail sales in each community and it does not take into account quality of service activities present. However, it appears to be more meaningful than a simple ranking by population.

Table 1.2 shows the number of services present in each community, which served as the basis for the service classification and initial ranking within each class. The 1970 population estimates and preliminary 1971 population figures, where available, were used in the ranking by population (Table 1.4). The results are summarized in Table 1.1 where communities are listed in ascending order of rank. There were four communities Too Small to Classify, three Hamlets, six Villages, four Towns, and two Greater Towns and one City. Figure 1.1 shows the geographic location of each community.

The type and number of services shown for each delivery point, other than grain elevators, may not be 100 percent accurate. This information was gleaned from a visual, field survey and from telephone directories. It is possible that some services were overlooked (e.g. door-to-door salesman; beauty parlour in basement of private home) and sometimes it was difficult to know whether a particular business or meeting hall was in regular use or abandoned.

As a working definition of "service" with respect to grain elevators the following criterion was used. The number of grain elevator companies actively receiving grain from producers, either on a part or full-time basis, during the 1969-70 crop year were counted. This means that the mere presence of a licensed, physical elevator facility was not counted a service if it was used for storage only. Also, if an elevator company had more than one elevator at a particular delivery point it was still only counted as one service.

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[1] Royal Commission on Agriculture and Rural Life, Regina, Saskatchewan: Queen's Printer, 1957, "Service Centers", Report No. 12.

Of the four delivery points Too Small to Classify one had no services, two had one service and one had two services (Table 1.2). The only type of service present was the grain elevator, with the exception of Clouston where there were group postal boxes served from the Prince Albert post office. One delivery point, Arma, was being used for storage only by the end of the 1969-70 crop year. It was emptied during 1970-71 and is now closed. This was done under a new program recently initiated by the Canadian Wheat Board.

Table 1.2 clearly shows the types and range of services available in the various communities. The predominant activity in Hamlets is the grain elevator and the associated fertilizer dealership, followed by a small general store, the post office and a service station. The general store and service station are frequently operated by a single proprietor.

A similar pattern of services holds true for Villages with the main additions being a grocery store, garage, a skating or curling rink, a church and meeting hall, school and fire hall. All Villages had a school and two had a bank or credit union. Absent are services like a clothing store, lawyer, physician and hospital.

Virtually the whole range of services is displayed in the group of Towns and Greater Towns. Where previously there may only have been one establishment, now there are often two or more establishments of the same type. Some degree of specialization is evident. For instance, to the grocery store a bakery is added and to the hardware store an appliance sales and service store is added. Other specialized services, not itemized in Table 1.2, were also present. Examples are dentists, drive-in eating establishments, trailer court and ambulance service.

The services in Prince Albert show still more specialization, such as a radio station and a brewery, and were too numerous to detail.

TABLE 1.1 CLASSIFICATION OF COMMUNITIES IN THE STUDY AREA

Too Small to Classify 0-2 Services	Hamlets 3-10 Services	Villages 11-35 Services	Towns 36-75 Services	Greater Towns 76 and Over Services	Cities
1 Arma	5 Davis	8 MacDowall	14 Hague	18 Blaine Lake	20 Prince Albert
2 La Plaine	6 Mennon	9 Osler	15 Langham	19 Rosthern	
3 Red Deer Hill	7 Carlton	10 Dalmeny	16 Duck Lake		
4 Clouston		11 Laird	17 Waldheim		
		12 Warman			
		13 Hepburn			

TABLE 1.2 SERVICES PRESENT IN COMMUNITIES BY RANK, 1971

	FARM PROD. ASSEMBLY			RETAIL TRADE																	
Delivery Point	Grain Elevator Co. (1970)	Seed Cleaning Plant	Livestock Loading	Fertilizer Dealer	Feed/Seed Farm Supply	General/Confectionery Store	Grocery Store	Service Station	Garage	Bulk Fuel Dealer	Hardware Store	Farm Equipment	Tire & Battery	Bakery	Restaurant/Cafe	Appliance Sales/Service	Lumber Yard	Furniture Store	Clothing Store	Pharmacy	Plumbing & Heating	Auto Dealer
Too Small to Classify (0-2)																						
1 Arma[a]																						
2 La Plaine[b]	1																					
3 Red Deer Hill	1																					
4 Clouston	1																					
Hamlets (3-10)																						
5 Davis	1					1																
6 Mennon	2			1		1		1														
7 Carlton	3			1		1		1		1												
Villages (11-35)																						
8 MacDowall	1					1	1	1	1						2							
9 Osler	1			1			1	2	1		1											1
10 Dalmeny	1				1	1	1	2				1								1		
11 Laird	3			1	1	1	1	1		2	1											
12 Warman[c]						2	2	4	1						1		1					
13 Hepburn	3			1		2		2	1	1	1	1					2					
Towns (36-75)																						
14 Hague	3			3		2	1	3	2	1	1	2			2		1	1				1
15 Langham	2				2	1	1	1	2	1	1	2			1	1	2					1
16 Duck Lake	1					2	2	2	2						2	2	1					1
17 Waldheim	3				1	1	2	4	2	1	1	2			1	1	1					2
Greater Towns (76 or more)																						
18 Blaine Lake	4			1	1	2	4	3	2	3	1	2			4		1		2	1	1	2
19 Rosthern	3			2	4	3	3	2	5	4	2	4	1	1	4	1	2	1	1	2	3	2
Cities 20 Prince Albert	Number of services are too numerous to show details. Total shown is only approximate.																					

	COMMERCIAL SERVICES																
Delivery Point	Auto Body Repair	Beauty Parlour	Barber	Pool Room	Laundry/Dry Cleaning	Hotel/Beverage Room	Motel	Liquor Vendor	Blacksmith/Welding	Construction Contractor	Electrician	Theatre	Locker Plant	Shoe Repair	Law Office	Funeral Home	Veterinarian
Too Small to Classify (0-2)																	
1 Arma[a]																	
2 La Plaine[b]																	
3 Red Deer Hill																	
4 Clouston																	
Hamlets (3-10)																	
5 Davis																	
6 Mennon																	
7 Carlton																	
Villages (11-35)																	
8 MacDowall				1		1											
9 Osler	1										1						
10 Dalmeny																1	
11 Laird						1											
12 Warman[c]						1											
13 Hepburn										1	1						
Towns (36-75)																	
14 Hague			1											1			
15 Langham			1	1		1									1		
16 Duck Lake			1	1		1			1	1							
17 Waldheim			1						1	1							
Greater Towns (76 or more)																	
18 Blaine Lake	1	1	2	1	2	1				1	1				1		
19 Rosthern	1	2	2	1	2	1	2	1	1	1	1		1	2	2		
Cities 20 Prince Albert																	

	PUBLIC SERVICES																FIN.		COMMUNICATION & TRANSPORTATION									
Delivery Point	Rink	Meeting Hall	Church	School	Village/Town Office	R.M. Office	Fire Hall	R.C.M.P. Detachment	Library	Parks/Fairgrounds	Ag. Rep. Office	Physician/Clinic	Hospital	Senior Citizens Home	Water/Sewer Works	Sask. Power Services	Bank/Credit Union	Insurance Agent	Post Office	Sask. Telephone	Newspaper	Road Maintenance Depot	Railway Station	S.T.C. Bus Depot	Truck Transport Co.	Air Field	Other Specialized Services	TOTAL
Too Small to Classify (0-2)																												
1 Arma[a]																												0
2 La Plaine[b]																												1
3 Red Deer Hill																												1
4 Clouston																			1									2
Hamlets (3-10)																												
5 Davis																			1									3
6 Mennon																			1									6
7 Carlton																			1									8
Villages (11-35)																												
8 MacDowall		1	2	1															1					1				15
9 Osler			1	1	1		1											1	1	1				1				18
10 Dalmeny	1		2	1	1	1				1				1	1			1	1	1				1			2	24
11 Laird	2	1	3	1	1		1								1		1	1	1	1								26
12 Warman[c]	1	1	4	1	1		1			1				1	1	1			1					1				27
13 Hepburn	2	2	2	1	1		1			1							1	2	1	1				1	1		2	35
Towns (36-75)																												
14 Hague	1	1	4	2	1		1					1			1		1	1	1	1			1				2	44
15 Langham	2	1	3	2	1		1			1				1	1		1	1	1	1			1	1			3	44
16 Duck Lake	2	3	2	2	1	1	1			2					1		1		1	1		1	1				9	49
17 Waldheim	2		5	2	1	1				1				1			1	2	1	1		1	1	1			7	53
Greater Towns (76 or more)																												
18 Blaine Lake	2		7	2	1	1	1	1		1					1	1	1	2	1	1		1	1	1	2		5	77
19 Rosthern	3	4	7	3	1	1	1	1	1	2	1	1	1	1	1	1	3	2	1	1	1	1	1	1	1		24	136
Cities 20 Prince Albert																												Over 500

[a]Storage only 1968-69 onward. Closed July 31, 1971.
[b]Closed July 31, 1971.
[c]Storage only 1968-69 and 1969-70. Closed 1970-71.

Source: Field Survey and Saskatchewan Telephone Directory.

LEGEND

- ○ TOO SMALL TO CLASSIFY.....0–2 SERVICES
- ● HAMLETS.....3–10 SERVICES
- ◉ VILLAGES.....11–35 SERVICES
- ◎ TOWNS.....36–75 SERVICES
- ● GREATER TOWNS.....76– & OVER SERVICES

CLASSIFICATION OF COMMUNITIES ROSTHERN REGION OF SASKATCHEWAN, 1971

Figure 1.1

Retail Trade

Only a limited amount of information on retail trade in the study area was available and, therefore, could not be used in the ranking process. Table 1.3 shows retail sales volume of each incorporated community in the study area for census years 1961 and 1966. The number of outlets reporting in any one community often does not account for all of the retail outlets actually operating in that community.

In general, retail sales volume increased with the ascending order of community rank, however, considerable variation exists. It must also be remembered that the ranking was established basis 1971 whereas the sales volume data are based on five and ten years earlier. The average volume of sales per retail outlet increased between 1961 and 1966 in all communities except Dalmeny and Warman.

TABLE 1.3 RETAIL TRADE OF INCORPORATED COMMUNITIES IN THE STUDY AREA, 1961 AND 1966

	1961			1966		
		Retail Sales			Retail Sales	
Delivery Point	No. of Outlets	Total	Per Outlet	No. of Outlets	Total	Per Outlet
		- $000's -			- $000's -	
Villages						
10 Dalmeny	5	220	44	5	185	37
11 Laird	6	270	45	4	204	51
12 Warman	4	171	43	9	314	35
13 Hepburn	3	110	37	4	213	53
Towns						
14 Hague	9	1,111	123	7	1,291	184
15 Langham	9	254	28	7	588	84
16 Duck Lake	7	684	98	7	807	115
17 Waldheim	7	732	105	7	1,082	155
Greater Towns						
18 Blaine Lake	16	478	30	16	925	58
19 Rosthern	23	2,232	97	21	2,938	140
Cities						
20 Prince Albert	181	28,135	155	178	38,915	219

Source: Census of Canada, Dominion Bureau of Statistics, Ottawa.

Population of Communities

Total population of the communities in the study area increased 30.6 percent between 1956 and 1971 (Table 1.4) and this increase is largely due to a 35.6 percent increase in the population of Prince Albert which made up 81.0 percent of the study area population in 1971. In total, population of the remaining communities increased 12.9 percent between 1956 and 1971. Percentage changes in population of each classification group are as follows: Greater Towns 10.6 percent, Towns 14.3 percent, Villages 19.0 percent and Hamlets -43.4 percent (basis 1970). Population figures for Too Small to Classify communities were incomplete but in general showed a decline. Total population of Saskatchewan between 1956 and 1971 increased 5.4 percent.

It is of interest to note that the population of Warman has increased substantially (it is even bigger than Blaine Lake) while its number of services has remained relatively low (27). This phenomenon can probably be explained by Warman's close proximity to Saskatoon (15 miles via paved highway) so that inhabitants of Warman go to Saskatoon for services and some seek employment in Saskatoon as well.

TABLE 1.4 POPULATION OF COMMUNITIES IN THE STUDY AREA, CENSUS YEARS 1941 TO 1971 AND 1970 ESTIMATES[a]

Delivery Point	1941	1951	1956	1961	1966	1970 Jan. 1 Estimates	1971 June 1 Preliminary
Too Small to Classify							
1 Arma	7	3	3			2	
2 La Plaine						7	
3 Red Deer Hill			10	13	20	7	
4 Clouston	30	10	13		15	14	
Hamlets							
5 Davis	36	60	45	39	31	34	
6 Mennon	31	25	46	33	12	20	
7 Carlton	64	69	75	67	47	40	
Villages							
8 MacDowall	221	239	234	223	188	188	
9 Osler[b]	87	124	133	146	158	161	182
10 Dalmeny[c]	198	308	352	415	416	460	418
11 Laird	284	314	312	278	273		218
12 Warman[d]	202	246	455	659	725	1,000	798
13 Hepburn	286	273	286	294	300	322	305
Towns							
14 Hague	261	365	413	430	439	456	423
15 Langham	318	305	390	429	433	495	536
16 Duck Lake	551	535	585	668	704	675	584
17 Waldheim	393	476	495	515	596	575	609
Greater Towns							
18 Blaine Lake	561	484	638	641	650	660	672
19 Rosthern[e]	1,149	1,183	1,268	1,264	1,414	1,450	1,436
Cities							
20 Prince Albert[f]	12,508	17,149	20,366	24,168	26,269	28,000	27,613
Study Area Total	17,187	22,168	26,119	30,282	32,690	34,566	34,106[g]
Province of Saskatchewan	895,992	831,728	880,665	925,181	955,344	942,000[h]	928,000

[a]A blank space means data was not available.
[b]Village of Osler incorporated Feb. 1, 1968.
[c]Part of 374. Warman annexed to Village of Dalmeny, 1964.
[d]Village of Warman incorporated in 1962 from 374. Warman. Town of Warman incorporated July 1, 1966.
[e]Part of 403. Rosthern annexed to Town of Rosthern Nov. 1, 1961, while part of the latter was added to 403. Rosthern.
[f]Parts of 491. Buckland annexed to Prince Albert City, 1964 and Feb. 1, 1966.
[g]This total includes 1970 estimates where 1971 data were not available.
[h]Estimate for June 1, 1970.

Source: Census of Canada, Dominion Bureau of Statistics, Ottawa.
Municipal Directory, 1970, Saskatchewan Department of Municipal Affairs, Regina.
Directory of Hamlets and Settlements, 1969, Saskatchewan Department of Municipal Affairs, Regina.

Farm Population

The study area encompasses about eight rural municipalities which are listed in Table 1.5. The figures shown represent the number of persons living on census farms.[1] In all but one municipality farm population decreased by over 30 percent between 1941 and 1966. In Cory it decreased 22.0 percent. In Saskatchewan farm population declined 45.4 percent while in the study area farm population declined 41.9 percent.

The combined effects of a substantial decline in farm population and an increase in total population resulted in rather sharp declines in the proportion of persons on farms, from a provincial total of 57.4 percent in 1941 to 29.4 percent 25 years later. The proportion of persons on farms in the study area in 1966 was about 24.2 percent.[2] These data illustrate the familiar rural to urban migration.

TABLE 1.5 FARM POPULATION IN THE STUDY AREA BY RURAL MUNICIPALITY, CENSUS YEARS 1941 TO 1966

Rural Municipalities	1941	1951	1956	1961	1966
Census Division #11					
344. Cory[a]	1,861	1,627	1,675	1,341	1,451
Census Division #15					
374. Warman[a]	3,530	3,184	2,909	2,591	2,337
403. Rosthern	3,092	2,313	2,166	1,919	1,575
404. Laird	2,437	1,670	1,559	1,294	1,155
461. Prince Albert	2,685	2,646	2,549	1,873	1,864
463. Duck Lake	1,577	1,387	1,244	1,005	901
491. Buckland	1,977	1,641	1,507	1,274	1,317
Census Division #16					
434. Blaine Lake	2,419	1,580	1,416	1,365	774
Study Area Total	19,578	16,048	15,025	12,662	11,374
Farm Population of Saskatchewan	514,677	399,473	362,231	305,740	281,089

[a]Rural municipalities 344. Cory and 374. Warman disorganized Dec. 31, 1969 to become part of 344. Corman Park, Jan. 1, 1970.

Source: Census of Canada, Dominion Bureau of Statistics, Ottawa.

[1]For a definition of the term "census farm" the reader is referred to the Agriculture Census of Canada, 1966.

[2]Based on a total population of 47,101 in the study area, shown in Table 1.6.

Population by Sex and Age Groups

Tables 1.6 and 1.7 contain 1966 Census population data for incorporated communities and rural municipalities making up the study area, as well as provincial totals. As was also true in the province, there were more males than females in the study area. In Saskatchewan 51.2 percent of the population were male while in the study area 50.8 percent were male.

The age group that most closely represents the effective working population is the 20 to 64 age group (Table 1.7). In the province this group comprised 47.9 percent of the population while the study area closely approximated this at 47.3 percent. People in the retired age group made up a significantly larger proportion of those living in incorporated communities than on farms and unincorporated communities. Notably, Langham, Waldheim and Blaine Lake all have senior citizen homes. For the other two age groups there did not appear to be much difference between the proportions of people living in incorporated centers and in rural areas.

TABLE 1.6 POPULATION BY SPECIFIED AGE GROUPS AND SEX FOR INCORPORATED COMMUNITIES AND RURAL MUNICIPALITIES IN THE STUDY AREA, 1966

		Years of Age											
		Total	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-69	70 and over
Incorporated Communities													
10 Dalmeny	T.	416	33	48	47	40	21	27	39	36	53	11	61
	M.	187	15	28	21	17	8	16	16	17	25	4	20
	F.	229	18	20	26	23	13	11	23	19	28	7	41
11 Laird	T.	273	25	41	29	23	11	28	24	23	30	9	30
	M.	128	14	19	12	12	5	14	8	10	18	4	12
	F.	145	11	22	17	11	6	14	16	13	12	5	18
12 Warman	T.	725	105	88	83	59	32	58	83	46	67	51	53
	M.	348	52	40	43	27	16	29	43	25	28	17	28
	F.	377	53	48	40	32	16	29	40	21	39	34	25
13 Hepburn	T.	300	29	38	35	26	7	20	40	32	31	14	28
	M.	147	15	22	19	11	4	10	16	12	20	6	12
	F.	153	14	16	16	15	3	10	24	20	11	8	16
14 Hague	T.	439	48	45	61	37	9	32	45	42	49	27	44
	M.	211	26	23	34	16	5	13	24	20	19	12	19
	F.	228	22	22	27	21	4	19	21	22	30	15	25
15 Langham	T.	433	34	36	41	34	14	27	40	62	48	21	76
	M.	216	8	19	25	20	9	10	22	33	20	9	41
	F.	217	26	17	16	14	5	17	18	29	28	12	35
16 Duck Lake	T.	704	76	77	98	67	25	61	83	57	71	25	64
	M.	354	42	45	57	28	9	23	48	30	29	12	31
	F.	350	34	32	41	39	16	38	35	27	42	13	33
17 Waldheim	T.	596	39	63	64	48	20	35	66	58	81	43	79
	M.	277	19	36	26	22	8	17	31	24	40	20	34
	F.	319	20	27	38	26	12	18	35	34	41	23	45
18 Blaine Lake	T.	650	37	53	41	38	29	57	48	72	131	39	105
	M.	332	18	25	22	18	14	29	25	35	65	19	62
	F.	318	19	28	19	20	15	28	23	37	66	20	43

See footnotes at end of table

(continued)

TABLE 1.6 POPULATION BY SPECIFIED AGE GROUPS AND SEX FOR INCORPORATED COMMUNITIES AND RURAL MUNICIPALITIES IN THE STUDY AREA, 1966 (continued)

			Years of Age									
		Total	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-69	70 and over
19. Rosthern	T.	1,414	128	109	131	114	80	138	128	178	159	67	182
	M.	650	66	38	73	50	37	68	54	78	81	29	76
	F.	764	62	71	58	64	43	70	74	100	78	38	106
20. Prince Albert	T.	26,269	3,073	3,048	2,737	2,479	1,788	3,036	3,052	2,618	1,984	777	1,677
	M.	12,850	1,543	1,521	1,378	1,172	790	1,518	1,472	1,236	989	395	836
	F.	13,419	1,530	1,527	1,359	1,307	998	1,518	1,580	1,382	995	382	841
Rural Municipalities[a]													
344. Cory	T.	1,513	200	186	190	139	62	165	184	183	127	33	44
	M.	811	107	98	103	72	35	82	95	95	76	21	27
	F.	702	93	88	87	67	27	83	89	88	51	12	17
374. Warman	T.	3,587	524	556	500	402	197	373	318	352	224	69	72
	M.	1,831	266	271	255	214	89	193	155	189	118	40	41
	F.	1,756	258	285	245	188	108	180	163	163	106	29	31
403. Rosthern	T.	1,749	183	216	243	180	79	162	217	181	169	45	74
	M.	906	93	107	121	91	47	82	115	100	86	33	31
	F.	843	90	109	122	89	32	80	102	81	83	12	43
404. Laird	T.	1,111	90	144	164	129	47	95	137	159	105	23	18
	M.	586	41	71	92	75	27	47	64	84	62	15	8
	F.	525	49	73	72	54	20	48	73	75	43	8	10
461. Prince Albert	T.	2,978	243	263	271	273	320	475	418	290	242	78	105
	M.	1,958	133	134	142	163	277	376	294	175	148	49	67
	F.	1,020	110	129	129	110	43	99	124	115	94	29	38
463. Duck Lake	T.	1,084	138	148	148	110	40	94	130	115	83	27	51
	M.	595	72	82	82	64	19	52	67	63	48	19	27
	F.	489	66	66	66	46	21	42	63	52	35	8	24
491. Buckland	T.	1,987	234	290	210	195	81	257	200	206	177	48	89
	M.	1,062	112	148	113	111	40	124	112	111	106	31	54
	F.	925	122	142	97	84	41	133	88	95	71	17	35

See footnotes at end of table

(continued)

TABLE 1.6 POPULATION BY SPECIFIED AGE GROUPS AND SEX FOR INCORPORATED COMMUNITIES AND RURAL MUNICIPALITIES IN THE STUDY AREA, 1966 (concluded)

		Years of Age											
		Total	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-69	70 and over
434. Blaine Lake	T.	873	76	82	122	92	26	70	120	146	103	7	29
	M.	478	40	50	71	48	11	36	61	77	64	4	16
	F.	395	36	32	51	44	15	34	59	69	39	3	13
Study Area Total	T.	47,101	5,315	5,531	5,215	4,485	2,888	5,210	5,372	4,856	3,934	1,414	2,881
	M.	23,927	2,682	2,777	2,689	2,231	1,450	2,739	2,722	2,414	2,042	739	1,442
	F.	23,174	2,633	2,754	2,526	2,254	1,438	2,471	2,650	2,442	1,892	675	1,439
Saskatchewan Total	T.	955,344	107,515	110,130	103,304	88,412	62,150	104,651	110,413	103,270	76,617	27,264	61,618
	M.	489,040	54,979	56,128	53,042	44,786	31,551	53,255	56,052	52,290	40,352	14,057	32,548
	F.	466,304	52,536	54,002	50,262	43,626	30,599	51,396	54,361	50,980	36,265	13,207	29,070

T. - Total M. - Male F. - Female

[a]Rural municipality data include farm and unincorporated community population but exclude populations of incorporated communities.

Source: Census of Canada, 1966, Dominion Bureau of Statistics, Ottawa.

TABLE 1.7 PROPORTION OF POPULATION FALLING WITHIN THREE SPECIFIED AGE GROUPS, 1966

	Pre-School and School Age Groups (0 to 19 Years)	Working Age Group (20 to 64)	Retired Age Group (65 and Over)
		- percent -	
Incorporated Communities			
10 Dalmeny	40.4	42.3	17.3
11 Laird	43.2	42.5	14.3
12 Warman	46.2	39.5	14.3
13 Hepburn	42.7	43.3	14.0
14 Hague	43.5	40.3	16.2
15 Langham	33.5	44.1	22.4
16 Duck Lake	45.2	42.2	12.6
17 Waldheim	35.9	43.6	20.5
18 Blaine Lake	26.0	51.8	22.2
19 Rosthern	34.1	48.3	17.6
20 Prince Albert	43.2	47.5	9.3
Rural Municipalities			
344. Cory	47.3	47.6	5.1
374. Warman	55.3	40.8	3.9
403. Rosthern	47.0	46.2	6.8
404. Laird	47.4	48.9	3.7
461. Prince Albert	35.3	58.6	6.1
463. Duck Lake	50.2	42.6	7.2
491. Buckland	46.8	46.3	6.9
434. Blaine Lake	42.6	53.3	4.1
Study Area Total	43.6	47.3	9.1
Saskatchewan Total	42.8	47.9	9.3

Source: Calculated from Table 1.6.

School Enrolment

It is evident from school enrolment figures (Table 1.8) that the trend in Western Canada towards school consolidation has affected the Rosthern study area as well. There were no schools in communities Too Small to Classify and Hamlets. Only two Villages, Osler and Hepburn, offered complete elementary and high school grades while another two Villages, MacDowall and Warman, only had grades 1-8. All elementary and secondary grades were available in the remaining centers.

TABLE 1.8 SCHOOL ENROLMENT IN THE STUDY AREA BY GRADES, SCHOOL YEAR 1971-72

Delivery Point	Grades: Kind.	1	2	3	4	5	6	7	8	9	10	11	12	Aux	Total	Pupils Conveyed to
								- enrolment -								
Too Small to Classify																
1 Arma	No School															Rosthern (1-12)
2 La Plaine	No School															Duck Lake (1-12)
3 Red Deer Hill	No School															Prince Albert (1-12)
4 Clouston	No School															Prince Albert (1-12)
Hamlets																
5 Davis	No School															Prince Albert (1-12)
6 Mennon	No School															Hepburn (1-12)
7 Carlton	No School															Duck Lake (1-12)
Villages																
8 MacDowall	-	9	10	12	15	7	12	18	3	-	-	-	-	-	86	Prince Albert (9-12)
9 Osler	-	38	33	24	27	23	26	-	-	78	48	30	21	-	348	
10 Dalmeny	-	17	25	22	22	23	26	25	25	24	21	17	-	-	247	Langham (12)
11 Laird	-	10	10	12	14	12	14	12	14	*	*	-	-	-	98	Waldheim (11-12)
12 Warman	-	24	43	24	22	25	31	62	40	-	-	-	-	13	284	Osler (9-12)
13 Hepburn	-	12	20	23	17	18	32	31	23	21	19	22	16	-	254	
Towns																
14 Hague	-	28	52	51	38	48	52	55	44	31	37	31	24	-	491	
15 Langham	-	27	22	23	24	21	24	27	24	26	20	30	34	7	309	
16 Duck Lake	-	40	44	65	38	45	44	49	43	42	36	29	28	-	503	
17 Waldheim	-	17	13	14	23	14	29	21	25	39	30	21	24	-	270	
Greater Towns																
18 Blaine Lake	-	19	27	22	21	27	24	32	33	23	34	31	23	-	316	
19 Rosthern	-	40	61	64	65	76	57	61	53	60	54	83	84	-	758	
Cities																
20 Prince Albert																
Public	30	440	489	451	397	435	421	391	397	542	525	449	388	223	5,578	
Separate	36	241	264	229	256	241	257	226	247	202	186	162	127	49	2,723	

Kind. - Kindergarten
Aux - Auxiliary classes

*Asterisk indicates that the grades in question were available but no students were enroled during 1971-72 school year.

Source: Saskatchewan Department of Education, Regina.

Post Office Revenue

Post office revenue serves as a crude indicator of socio-economic activity in a community and its environs (Table 1.9). The last post office in communities Too Small to Classify closed in 1969 at Red Deer Hill. All remaining communities, except the Hamlet of Mennon, had active post offices. Clouston and Mennon had community mail boxes where mail for local residents is deposited. No revenue is generated in these communities under such an arrangement.

In 1971 postal revenue in all Villages was over $3,000, except in MacDowall ($1,906). Hepburn, the largest of the Villages, had postal revenues of over $7,000 which is about twice as much revenue as in any of the other Villages. The Hepburn Bible Institute probably generates a significant proportion of the revenue.

Postal revenues in Villages, Towns, Greater Towns and for the City of Prince Albert have all increased over time. The largest percentage increase occurred in the Town of Langham which increased about 126 percent between 1963 and 1971. Revenue in Towns ranged from $6,566 to $7,254 while the Greater Towns of Blaine Lake and Rosthern showed revenues of $9,956 and $29,479 respectively. Prince Albert's postal revenue nearly reached $400 thousand, many times greater than the other communities.

TABLE 1.9 POST OFFICE REVENUE IN THE STUDY AREA, FISCAL YEARS 1962-63 TO 1970-71

Delivery Point	Year Ending March 31	1963	1964	1965	1966	1967	1968	1969	1970	1971
						- dollars -				
Too Small to Classify										
1 Arma		No Post Office								
2 La Plaine		No Post Office								
3 Red Deer Hill		325	264	269	232	225	225	431	179	Closed Oct. 1969
4 Clouston		162	137	142	129	131	127	65	Closed Dec. 1968[a]	
Hamlets										
5 Davis		470	442	473	467	446	430	426	443	498
6 Mennon		159	138	142	114	127	141	109	Closed Mar. 1969[b]	
7 Carlton		746	699	678	726	727	744	1,225	1,242	1,370
Villages										
8 MacDowall		1,107	1,094	1,186	1,219	1,116	1,188	1,173	1,255	1,906
9 Osler		1,611	1,746	1,854	1,577	1,522	1,483	1,588	1,709	3,096
10 Dalmeny		2,363	2,498	2,708	2,520	2,452	2,599	2,845	3,135	4,341
11 Laird		2,315	2,310	2,259	2,307	2,176	2,289	2,539	2,669	3,376
12 Warman		1,942	1,756	1,860	1,822	1,870	2,171	2,180	2,366	3,532
13 Hepburn		3,410	3,887	4,376	4,552	5,110	5,160	5,424	6,390	7,076
Towns										
14 Hague		3,141	3,378	3,605	3,738	3,637	4,040	4,049	4,240	6,566
15 Langham		3,085	3,378	3,815	3,806	3,948	4,389	4,800	5,020	6,987
16 Duck Lake		4,035	4,183	4,447	4,727	3,840	4,644	4,513	5,008	6,843
17 Waldheim		3,680	3,753	4,235	4,368	4,593	5,010	5,007	5,460	7,254
Greater Towns										
18 Blaine Lake		6,009	6,094	6,448	6,355	6,385	6,952	7,191	7,758	9,956
19 Rosthern		18,477	19,892	22,145	22,373	23,436	23,922	22,079	25,912	29,479
Cities										
20 Prince Albert		231,542	238,829	255,374	261,448	271,882	303,525	328,764	354,670	393,089

[a]Group postal boxes served by Prince Albert.
[b]Group postal boxes served by Dalmeny.

Source: Canada Post Office Department, Saskatoon.

Property Tax Assessment

The property tax assessment figures in Table 1.10 show the relative importance of railway property and other right-of-way occupancies to the total assessment of each community in the area. Generally speaking, the larger the community with respect to number of service activities, the lower is the proportion of tax assessment related to railway associated property. This is clearly portrayed by comparing the proportions in communities Too Small to Classify with those in Towns, Greater Towns and Prince Albert. In Arma, for example, railway associated assessment made up 100 percent of the total while in Rosthern it accounted for only 7.59 percent.

The reason why tax assessment of R.O.W. properties in Warman is such a small proportion of total assessment (2.56 percent) is because the grain elevators have been removed.

TABLE 1.10 PROPERTY TAX ASSESSMENT FOR COMMUNITIES IN THE STUDY AREA, 1971

	Too Small to Classify				Hamlets		
	1 Arma	2 La Plaine	3 Red Deer Hill	4 Clouston	5 Davis	6 Mennon	7 Carlton
	- dollars -						
Right-of-Way Properties							
Railway Property							
Roadway	*	*	*	*	*	*	-
Other Land	200	200	430	270	350	400	540
Buildings	-	-	1,340	150	290	-	-
Business	-	-	100	-	100	-	-
Other R.O.W. Property							
Taxable Land	40	70	70	50	70	130	270
Taxable Buildings	4,490	16,230	11,140	8,750	10,460	12,130	44,990
Taxable Business	-	3,160	2,000	1,480	1,660	1,830	9,320
Total Assessment of R.O.W. Properties	4,730	19,660	15,080	10,700	12,930	14,490	55,120
Non-Right-of-Way Properties							
Taxable Land	-	160	370	70	940	840	1,940
Taxable Buildings	-	1,010	8,290	5,250	6,470	3,680	22,110
Taxable Business	-	-	-	-	1,780	950	2,530
Total Assessment of Non-Right-of-Way Properties	-	1,170	8,660	5,320	9,190	5,470	26,580
Total Tax Assessment	4,730	20,830	23,740	16,020	22,120	19,960	81,700
Percent of Tax Assessment derived from R.O.W. Properties	100.0	94.38	63.52	66.79	58.45	72.60	67.47

See footnotes at end of table

(continued)

TABLE 1.10 PROPERTY TAX ASSESSMENT FOR COMMUNITIES IN THE STUDY AREA, 1971 (continued)

	Villages						Towns
	8 MacDowall	9 Osler	10 Dalmeny	11 Laird	12 Warman	13 Hepburn	14 Hague
	- dollars -						
Right-of-Way Properties							
Railway Property							
Roadway	*	1,560	3,990	2,340	8,750	2,520	1,680
Other Land	280	550	1,140	870	1,310	1,030	1,790
Buildings	3,240	1,230	2,970	-	3,950	2,820	4,160
Business	100	100	120	-	100	100	1,050
Other R.O.W. Property							
Taxable Land	60	13,320	860	720	-	680	2,000
Taxable Buildings	9,790	29,780	46,400	44,730	-	40,910	61,300
Taxable Business	1,700	6,350	6,890	9,190	-	10,160	17,400
Total Assessment of R.O.W. Properties	15,170	52,890	62,370	57,850	14,110	58,220	89,380
Non-Right-of-Way Properties							
Taxable Land	6,760	330	55,700	26,780	86,190	47,730	67,900
Taxable Buildings	75,910	117,920	298,290	169,850	426,070	307,095	344,620
Taxable Business	8,750	11,680	11,130	20,370	24,930	29,245	42,510
Total Assessment of Non-Right-of-Way Properties	91,420	129,930	365,120	217,000	537,190	384,070	455,030
Total Tax Assessment	106,590	182,820	427,490	274,850	551,300	442,290	544,410
Percent of Tax Assessment derived from R.O.W. Properties	14.23	28.93	14.58	21.05	2.56	13.16	16.42

See footnotes at end of table

(continued)

TABLE 1.10 PROPERTY TAX ASSESSMENT FOR COMMUNITIES IN THE STUDY AREA, 1971 (concluded)

	Towns			Greater Towns		Cities
	15 Langham	16 Duck Lake	17 Waldheim	18 Blaine Lake	19 Rosthern	20 Prince Albert[a]
	- dollars -					
Right-of-Way Properties						
Railway Property						
Roadway	7,700	5,800	3,900	3,900	6,750	91,020
Other Land	1,480	1,140	1,300	4,920	15,000	309,820
Buildings	1,870	4,580	1,700	2,620	9,550	166,060
Business	1,720	2,110	710	990	4,030	57,700
Other R.O.W. Property						
Taxable Land	1,860	610	2,560	4,670	15,630	376,180
Taxable Buildings	37,500	21,740	54,530	105,680	114,210	493,060
Taxable Business	8,940	7,190	16,320	29,290	39,250	166,290
Total Assessment of R.O.W. Properties	61,070	43,170	81,020	152,070	204,420	1,660,130
Non-Right-of-Way Properties						
Taxable Land	116,220	76,230	82,540	159,610	508,090	12,633,320
Taxable Buildings	527,260	387,850	493,850	689,900	1,632,650	26,241,580
Taxable Business	53,760	53,080	39,930	81,690	348,540	3,180,860
Total Assessment of Non-Right-of-Way Properties	697,240	517,160	616,320	931,200	2,489,280	42,055,760
Total Tax Assessment	758,310	560,330	697,340	1,083,270	2,693,700	43,715,890
Percent of Tax Assessment derived from R.O.W. Properties	8.05	7.70	11.62	14.04	7.59	3.80

R.O.W. - Right-of-Way

*Tax assessment of rail roadway property in unincorporated communities is included as part of total rural municipality tax assessments.

[a]Prince Albert data are for 1972.

Source: Saskatchewan Department of Municipal Affairs, Regina.

Carload Rail Traffic

The volume of rail traffic to and from a community is another indicator of economic activity, although truck traffic should also be considered to obtain a more complete picture. Generally speaking, the more people and service activities there are in a community the more freight traffic is generated. Grain shipments at a particular delivery point depend on such inter-related factors as: size of hinterland, number of permit holders, crop yield and grain marketings in general (exports) and grain marketings from that delivery point in particular.

Table 1.11 shows the number of carloads shipped in and out of each delivery point in the study area for the years 1966 to 1971.[1] The type of traffic is broken down into one of five broad categories and again communities are listed in the order of rank first established in Table 1.1.

Delivery points Too Small to Classify had very little traffic. What traffic there was generally declined over time and was virtually all accounted for by outbound grain traffic. In 1971 Clouston had the most number of cars; namely, 106 cars outbound. In Arma, rail traffic ceased in 1969 when the grain elevator closed for storage only; however, prior to the end of the 1970-71 crop year the grain elevator was emptied and closed completely. The final grain shipments appear in the 1970 and 1971 rail traffic data.

Volume of traffic in Hamlets ranged from 101 cars to 323 cars outbound in 1971. Except for two inbound cars of manufactured products at Carlton, all traffic was accounted for by outbound grain traffic.

Grain shipments also accounted for all of the outbound rail traffic of Villages of which Dalmeny shipped the most in 1971. The elevator at Warman was closed for storage prior to August 1, 1968 and had grain receipts during the 1967-68 crop year[2] but no outbound grain shipments during the 1968 calendar year. By the end of the 1969-70 crop year, however, the elevator was emptied and the license cancelled.

The traffic pattern for Towns and Greater Towns remains essentially the same as for Hamlets and Villages; namely, that outbound grain is the most important, that traffic out greatly exceeds traffic in, and that inbound traffic is made up of a variety of products like coal, lumber and building supplies, fertilizer, fuel oil, agricultural supplies and machinery. Of course, the traffic volume is higher in Towns and Greater Towns than in smaller centers. In 1971 total movements ranged from 229 cars at Duck Lake to 653 cars at Rosthern.

Carload traffic is well over 10,000 per year at Prince Albert with a better balance between inbound and outbound traffic. The Prince Albert pulp mill, located on a C.N. spur line upon which C.P. obtained running rights, began operations in 1968 and generates a large amount of traffic. Pulp mill carload traffic handled by C.N. is included in the C.N. totals.

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[1] Carload rail traffic data prior to 1966 were not available.
[2] See Table 3.6.

TABLE 1.11 REVENUE CARLOAD RAIL TRAFFIC BY DELIVERY POINT IN THE STUDY AREA, 1966 TO 1971

Delivery Point	1966		1967		1968		1969		1970		1971	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
	- carloads -											
Too Small to Classify												
1 Arma												
Products of Agriculture	-	44	-	15	-	11	-	-	-	1	-	8
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	44	-	15	-	11	-	-	-	1	-	8
2 La Plaine												
Products of Agriculture	-	84	-	50	-	57	-	24	-	32	-	47
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	1	-	-	-	-	-	-	-	-	-
Total	-	84	1	50	-	57	-	24	-	32	-	47
3 Red Deer Hill												
Products of Agriculture	-	103	-	110	-	87	-	54	-	91	-	79
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	1	-	-	-	-	-	-	-
Total	-	103	-	110	1	87	-	54	-	91	-	79
4 Clouston												
Products of Agriculture	-	95	-	97	-	83	-	71	-	105	-	106
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	1	-	4	-	1	-	2	-	3	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	3	-	-	-	1	1	-	-	-	-	-	-
Total	4	95	4	97	2	84	2	71	3	105	-	106

See footnotes at end of table

(continued)

TABLE 1.11 REVENUE CARLOAD RAIL TRAFFIC BY DELIVERY POINT IN THE STUDY AREA, 1966 TO 1971 (continued)

Delivery Point	1966		1967		1968		1969		1970		1971	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
	- carloads -											
Hamlets												
5 Davis												
Products of Agriculture	-	118	1	107	-	99	-	57	-	93	-	101
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	118	1	107	-	99	-	57	-	93	-	101
6 Mennon												
Products of Agriculture	-	142	-	140	-	52	-	21	-	42	-	130
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	3	-	2	-	1	-	2	2	-	-	-	-
Total	3	142	2	140	1	52	2	23	-	42	-	130
7 Carlton												
Products of Agriculture	-	260	-	258	-	212	-	135	-	231	-	323
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	7	-	16	-	8	-	2	-	2	-	2	-
Total	7	260	16	258	8	212	2	135	2	231	2	323
Villages												
8 MacDowall												
Products of Agriculture	-	62	-	62	-	49	-	45	-	69	-	58
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	-	-	-	-	-	-	-	-	2	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	1	-	-	-	1	1	-	-	-	1	-	-
Total	1	62	-	62	1	50	-	45	2	70	-	58

See footnotes at end of table

(continued)

TABLE 1.11 REVENUE CARLOAD RAIL TRAFFIC BY DELIVERY POINT IN THE STUDY AREA, 1966 TO 1971 (continued)

Delivery Point	1966		1967		1968		1969		1970		1971	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
	- carloads -											
9 Osler												
Products of Agriculture	-	126	-	100	-	71	-	72	-	79	-	110
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	8	-	5	-	3	-	7	-	3	-	6	-
Products of Forests	-	-	-	-	2	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	-	-	-	-	-	-	2	-
Total	8	126	5	100	5	71	7	72	3	79	8	110
10 Dalmeny												
Products of Agriculture	-	307	-	189	-	103	-	69	-	88	-	303
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	2	-	7	-	2	-	-	-	-	-	-	-
Products of Forests	-	-	5	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	11	-	8	-	5	-	4	-	-	-	1	-
Total	13	307	20	189	7	103	4	69	-	88	1	303
11 Laird												
Products of Agriculture	-	280	-	258	-	196	-	122	-	191	-	274
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	4	-	3	-	2	-	2	-	-	-	-	-
Products of Forests	-	-	3	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	5	-	7	-	5	-	3	-	1	-	1	-
Total	9	280	13	258	7	196	5	122	1	191	1	274
12 Warman												
Products of Agriculture	-	33	-	31	-	-	-	1	-	12	-	-
Animals and Products	-	-	-	-	-	-	1	-	1	-	-	-
Products of Mines	8	-	5	-	1	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	1	-	-	-	-	-	-	-
Manufactures and Misc.	2	-	3	4	4	-	-	-	-	-	-	-
Total	10	33	8	35	6	-	1	1	1	12	-	-

See footnotes at end of table

(continued)

TABLE 1.11 REVENUE CARLOAD RAIL TRAFFIC BY DELIVERY POINT IN THE STUDY AREA, 1966 TO 1971 (continued)

Delivery Point	1966		1967		1968		1969		1970		1971	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
	- carloads -											
13 Hepburn												
Products of Agriculture	-	282	-	262	-	176	-	96	-	130	-	284
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	8	-	7	-	3	-	5	-	3	-	4	-
Products of Forests	1	-	4	-	7	-	11	-	6	-	6	-
Manufactures and Misc.	11	-	9	-	7	-	4	-	7	-	1	-
Total	20	282	20	262	17	176	20	96	16	130	11	284
Towns												
14 Hague												
Products of Agriculture	-	318	-	275	-	195	-	163	-	195	-	312
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	16	-	10	-	10	-	8	-	4	-	4	-
Products of Forests	9	-	4	-	2	-	1	-	-	-	-	-
Manufactures and Misc.	79	1	89	-	91	4	78	1	43	4	63	1
Total	104	319	103	275	103	199	87	164	47	199	67	313
15 Langham												
Products of Agriculture	-	187	-	233	-	138	-	69	-	127	-	277
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	7	-	5	-	3	-	3	-	3	-	3	-
Products of Forests	12	-	8	-	8	-	-	-	4	-	1	-
Manufactures and Misc.	16	-	13	-	15	-	3	-	1	2	4	1
Total	35	187	26	233	23	138	6	69	8	129	8	278
16 Duck Lake												
Products of Agriculture	-	91	-	111	-	94	-	83	-	115	-	161
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	24	-	18	-	11	-	5	-	5	-	4	-
Products of Forests	5	-	2	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	63	-	63	-	56	2	43	-	62	3	64	-
Total	92	91	83	111	67	96	48	83	67	118	68	161

See footnotes at end of table

(continued)

TABLE 1.11 REVENUE CARLOAD RAIL TRAFFIC BY DELIVERY POINT IN THE STUDY AREA, 1966 TO 1971 (continued)

Delivery Point	1966		1967		1968		1969		1970		1971	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
	- carloads -											
17 Waldheim												
Products of Agriculture	-	332	-	332	-	252	-	125	-	165	-	326
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	9	-	6	-	4	-	1	-	2	-	-	-
Products of Forests	3	-	4	-	4	-	2	-	2	-	1	-
Manufactures and Misc.	14	-	21	-	12	-	6	-	1	-	3	2
Total	26	332	31	332	20	252	9	125	5	165	4	328
Greater Towns												
18 Blaine Lake												
Products of Agriculture	-	482	-	507	-	382	-	352	-	470	-	579
Animals and Products	-	-	-	-	-	-	-	-	-	-	-	-
Products of Mines	22	-	11	-	9	-	9	-	6	-	8	-
Products of Forests	2	-	-	-	-	-	-	-	-	-	1	-
Manufactures and Misc.	87	-	89	-	84	3	52	1	45	2	28	-
Total	111	482	100	507	93	385	61	353	51	472	37	579
19 Rosthern												
Products of Agriculture	-	339	-	287	1	344	3	254	-	335	-	545
Animals and Products	-	-	-	-	-	-	2	1	2	2	3	4
Products of Mines	12	-	12	-	11	-	10	-	4	-	6	-
Products of Forests	7	-	8	-	8	-	7	-	6	-	16	-
Manufactures and Misc.	170	-	145	-	107	1	91	1	58	1	77	2
Total	189	339	165	287	127	345	113	256	70	338	102	551
Cities												
20 Prince Albert (C.P.)												
Products of Agriculture	63	48	32	19	79	4	56	7	55	1	51	24
Animals and Products	10	342	9	353	12	100	4	47	1	34	-	62
Products of Mines	121	-	93	2	76	-	106	-	89	-	41	-
Products of Forests	169	29	149	16	151	31	95	11	118	7	64	7
Manufactures and Misc.	1,051	434	1,430	503	1,250	470	1,110	430	963	289	687	310
Total	1,414	853	1,713	893	1,568	605	1,371	495	1,226	331	843	403

See footnotes at end of table

(continued)

TABLE 1.11 REVENUE CARLOAD RAIL TRAFFIC BY DELIVERY POINT IN THE STUDY AREA, 1966 TO 1971 (concluded)

Delivery Point	1966		1967		1968		1969		1970		1971	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
						- carloads -						
Prince Albert Pulp Mill (C.P.)												
Products of Agriculture					-	-	-	-	-	-	-	-
Animals and Products					-	-	-	-	-	-	-	-
Products of Mines	n.a.		n.a.		-	-	-	-	-	-	-	1
Products of Forests					6	-	138	1	480	-	332	1
Manufactures and Misc.					2	322	1	1,052	1	1,170	-	1,344
Total					8	322	139	1,053	481	1,170	332	1,346
Prince Albert (C.N.)												
Products of Agriculture	243	642	259	656	224	623	203	737	653	945	595	977
Animals and Products	23	613	23	583	138	488	142	393	84	553	92	470
Products of Mines	216	3	293	37	282	26	352	47	294	-	154	1
Products of Forests	195	256	290	134	419	96	210	65	495	50	1,713	17
Manufactures and Misc.	1,717	605	2,336	615	1,802	1,191	1,950	2,796	1,099	2,732	1,676	3,129
Total	2,394	2,119	3,201	2,025	2,865	2,424	2,857	4,038	2,625	4,280	4,230	4,595

Products of Agriculture - All grains, seeds, flour, hay and straw, fruits and vegetables, etc.
Animals and Products - All livestock, poultry, meats, fish, dairy products, etc.
Products of Mines - Coal, mineral ores and concentrates, cement, brick, asphalt, etc.
Products of Forests - Logs, lumber, all processed natural wood, plywood, shingles, pulpwood, etc.
Manufactures and Miscellaneous - Petroleum products, chemicals, fertilizer, machinery and parts, vehicles, furniture, food and feed products, woodpulp, newsprint paper, etc.

n.a. - Not available.

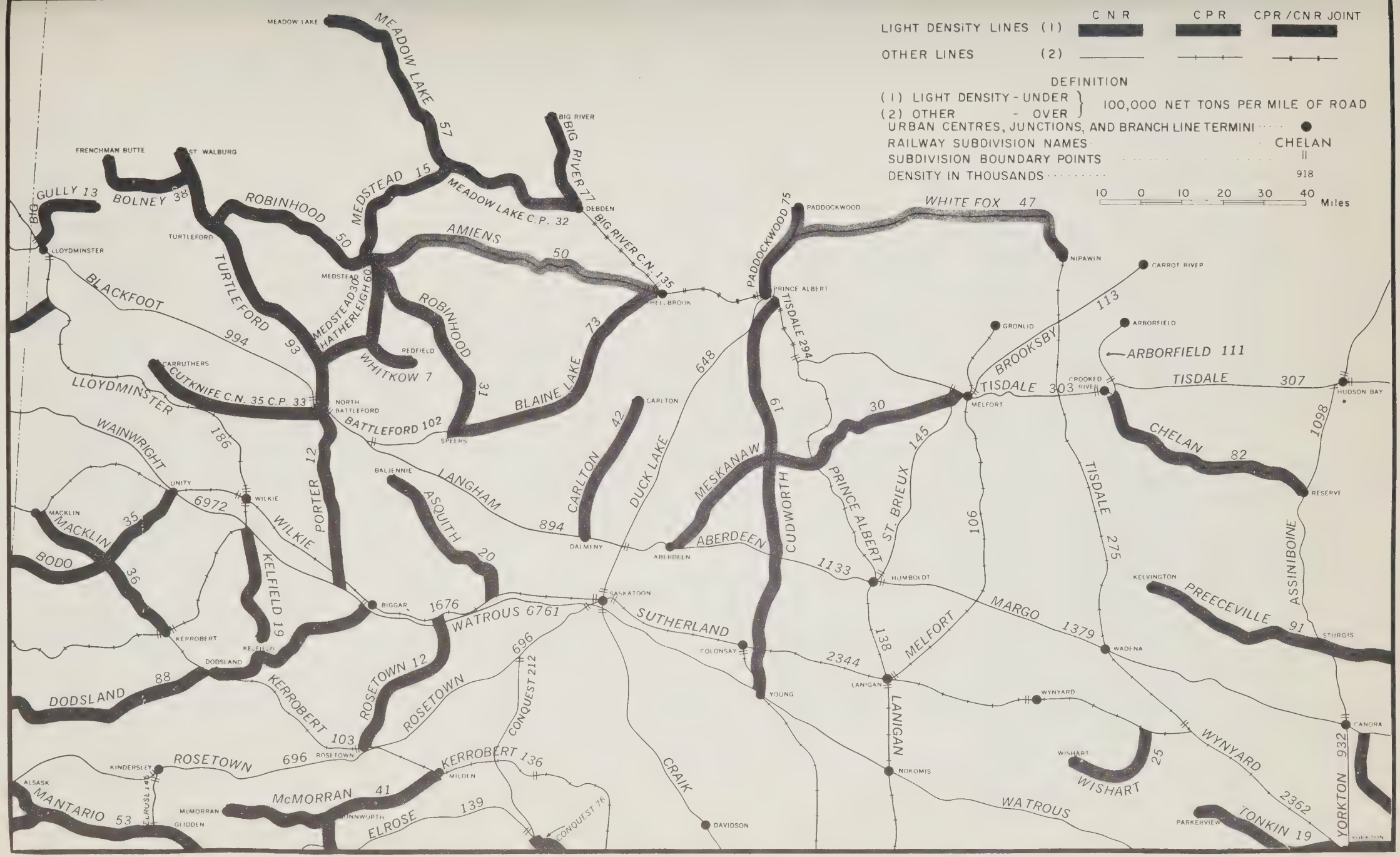
Source: Canadian National Railways, Freight Sales, Winnipeg, Manitoba.
Canadian Pacific Railways, Department of Research, Montreal, Quebec.

Railway Freight Density

For purposes of internal management the railway companies keep detailed records showing the number of tons of revenue freight traffic on every mile of track in each year. Figure 1.2 shows this information on a railway network map of northern Saskatchewan, including the Rosthern study area.

The data are expressed in thousand net tons of freight (contents only) per mile of line and a perusal of the map would indicate on which lines through traffic is heavy and where traffic is light. Some transport people attempt to gauge the profitability of a line by its traffic density or the usefulness of a track by the traffic generated on that extent of line. This is not a hard and fast concept, however, because there is no indication whatsoever in these data as to the mix of traffic, or the freight rates charged. Despite this shortcoming, the map in Figure 1.2 is coded to show those rail lines where the freight traffic density is less than 100,000 net tons per mile of road (light density lines) and those where it is more than 100,000 net tons (other lines).

The density in the study area in 1968 ranged from 19 thousand net tons on the Cudworth subdivision to over one million net tons on the Aberdeen subdivision east of Warman. The Carlton subdivision had a density of 42 thousand net tons per mile and the Duck Lake subdivision had a density of 648 thousand net tons.



RAILWAY FREIGHT DENSITY - NORTHERN SASKATCHEWAN, 1968

Source: Map "Railway Freight Density Prairie Region 1968"
Soil Research Institute, Canada Department of
Agriculture, Ottawa.

Figure 1.2

Highway Transportation Services

Truck traffic data similar to railway carload traffic showing volume of traffic to and from each community was not available but most communities are served by one or more trucking companies. The names of for-hire common and contract carriers servicing each center are listed in Table 1.12. Excluded from this list are, of course, farm trucks as well as private urban and private intercity truckers.

Only one of the communities Too Small to Classify had trucking service while only one of the Hamlets, Davis, was without trucking service. All the other centers except Laird had two or more for-hire carriers serving the community.

TABLE 1.12 TRUCK SERVICE BY COMMUNITY, 1971

	For-Hire Carriers									
Delivery Point	Canadian National Transport	Rosthern Transport	Soo-Security Motorways Ltd.	Central Transport	Hafford Transport	Hepburn Transport	Ray's Transport	L.A. Nickel Transport	Hub City Express	Sask. Trans-port. Co.
Too Small to Classify										
1 Arma										
2 La Plaine										
3 Red Deer Hill			X							
4 Clouston										
Hamlets										
5 Davis										
6 Mennon		X								
7 Carlton		X								
Villages										
8 MacDowall	X		X							X
9 Osler		X								X
10 Dalmeny	X				X					X
11 Laird								X		
12 Warman		X								X
13 Hepburn						X				X
Towns										
14 Hague	X	X								
15 Langham	X				X					X
16 Duck Lake	X		X							
17 Waldheim	X	X								X
Greater Towns										
18 Blaine Lake	X	X		X			X			X
19 Rosthern	X		X							X
Cities										
20 Prince Albert	X		X	X					X	X

Source: Saskatchewan Shippers' Directory, 1971.

PART II

GRAIN PRODUCTION CHARACTERISTICS

Soil Capability for Agriculture[1]

The study area encompasses in excess of one million acres. The majority of the area is within the Second Prairie Steppe, comprised of the Saskatchewan Rivers Plain occurring between and to the north of the two Saskatchewan Rivers. A small area of dunes are evident just north of Carlton and Duck Lake.

The gently undulating to gently rolling topography ranges in elevation above sea level from 1,500 feet to 1,900 feet along the base of the Third Prairie Steppe. External drainage is provided by the North and South Saskatchewan Rivers.

Soils of the Saskatchewan Rivers Plain are largely Class 2 which have only moderate limitations and as such can support a wide range of agricultural crops. Limitations of Class 3 soils are more severe but many of them can, at least in part, be overcome by good management practices. The remainder of the soils in the study area, particularly along the river banks fall into Classes 4, 5 and 6 which have severe to very severe limitations and for the most part are suited only for production of perennial forage crops.

---

[1]For a more detailed description of topography and soil capability in the area see the Canada Land Inventory map for Saskatoon inserted into the envelope inside the back cover. See also J.H. Richards and K.I. Fung, Atlas of Saskatchewan, Saskatoon: University of Saskatchewan, 1969.

Sample Aerial Photos

Figures 2.1 and 2.2 show aerial photos of the Carlton and Warman-Osler areas respectively. These photos were taken in the summer of 1970 for use by the Prairie Farm Assistance Administration in their involvement with Operation LIFT. The purpose of including these photos is simply by way of example to show the kind of aerial photos that are available of the entire Prairie region. Landmarks such as communities, railroads and highways have been identified on the figures.

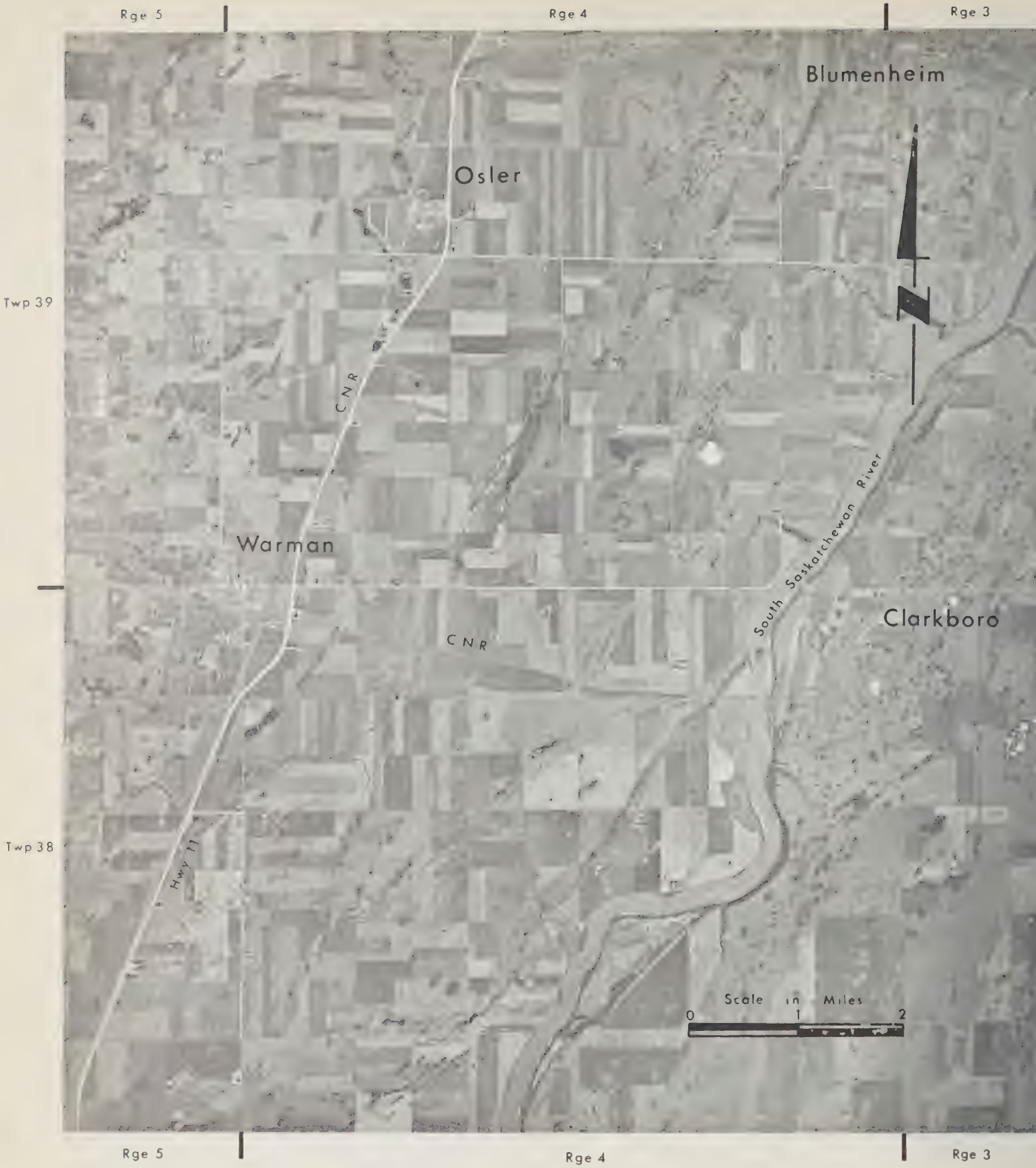
It is interesting to compare these photos to the soil capability map referred to earlier and to Saskatchewan soil survey maps.[1] Rough terrain is evident throughout much of the Carlton area photo, particularly along the river banks, and to a lesser extent in the Warman-Osler area.

---

[1] Soil Survey of Southern Saskatchewan, Report No. 12, University of Saskatchewan, Saskatoon, June, 1944.

AERIAL VIEW OF CARLTON AREA

Figure 2.1



AERIAL VIEW OF WARMAN - OSLER AREA

Figure 2.2

Temperature Norms and Extremes

Temperature norms and extremes within and near the study area are shown in Table 2.1. Saskatoon is just outside the southern boundary of the study area.

The July mean daily temperatures range from 64.9°F at Prince Albert to 66.6°F at Saskatoon, while January values range from -3.0°F to 1.0°F corresponding to the same two locations. Saskatoon recorded the highest temperature 104°F in both June and July while Prince Albert recorded the lowest reading of -70°F in February. In general, the climate is continental with warm summers and cold winters.

The annual average growing season is 169 days of which about 100 days make up the average frost-free period.[1]

Since plant growth is markedly influenced by temperature, the amount of "effective" heat available to plants is sometimes expressed in "growing degree-days" or "degree-days." Degree-days are most commonly calculated from a base temperature of 42°F which is near the threshold of growth for a number of common crops. At Prince Albert 2,416 degree-days (above 42°F) were recorded with 96 percent of them occurring in the period May to September. Saskatoon had 2,797 degree-days and 94 percent of them during May to September.

---

[1]Map: Soil Capability For Agriculture, Canada Land Inventory, (Saskatoon 73B), Queen's Printer, Ottawa, Ontario, 1968.

TABLE 2.1 TEMPERATURE NORMS AND EXTREMES FOR SPECIFIED METEOROLOGICAL STATIONS

Meteorological Station	January	February	March	April	May	June	July	August	September	October	November	December	Year
						- degrees Fahrenheit -							
Prince Albert Airport													
Mean Daily Maximum[a]	7.0	13.6	25.9	47.1	63.3	69.9	77.1	74.1	62.7	49.6	27.2	13.8	44.3
Mean Daily Minimum[a]	-12.9	-8.4	3.4	25.1	37.9	46.3	52.6	49.5	39.7	28.9	11.6	-4.7	22.4
Mean Daily Temperature[a]	-3.0	2.6	14.7	36.1	50.6	58.1	64.9	61.8	51.2	39.3	19.4	4.6	33.4
Maximum Temperature[b]	55	55	68	90	96	98	103	98	95	87	67	52	103
Minimum Temperature[b]	-67	-70	-50	-29	3	24	33	22	4	-15	-49	-57	-70
Growing Degree-Days[c]	0	0	0	27	265	498	689	602	262	72	1	0	2,416
Rosthern													
Mean Daily Maximum[d]	7.1	12.4	26.2	47.5	66.6	72.3	79.2	75.2	63.5	49.6	27.5	14.3	45.1
Mean Daily Minimum[d]	-10.2	-7.4	6.8	26.6	39.7	47.1	52.9	49.2	40.7	28.7	11.8	-1.0	23.7
Mean Daily Temperature[d]	-1.6	2.5	16.5	37.0	53.2	59.7	66.1	62.2	52.1	39.2	19.7	6.7	34.4
Maximum Temperature[e]	43	44	62	87	97	101	103	99	92	85	62	49	103
Minimum Temperature[e]	-59	-48	-34	-34	15	22	31	30	8	-12	-31	-51	-59
Growing Degree-Days[c]	Not available												
Saskatoon Airport													
Mean Daily Maximum[f]	9.7	14.1	27.1	48.9	64.3	71.4	79.0	75.6	64.0	52.3	29.9	16.6	46.2
Mean Daily Minimum[f]	-7.7	-5.5	8.3	28.5	40.3	48.0	54.2	51.4	41.8	30.5	13.5	-0.6	25.2
Mean Daily Temperature[f]	1.0	4.3	17.7	38.7	52.3	59.7	66.6	63.5	52.9	41.4	21.7	8.0	35.7
Maximum Temperature[g]	48	55	73	92	98	104	104	101	93	90	67	56	104
Minimum Temperature[g]	-55	-49	-36	-19	15	25	32	30	12	-14	-28	-40	-55
Growing Degree-Days[c]	0	0	1	46	321	556	757	680	324	109	3	0	2,797

[a]Norms are based on a full 30-year period from 1931-1960.
[b]Extremes are for 80-89 years.
[c]Growing degree-day normals above 42°F based on the period 1953-1967. One growing degree-day results for each degree that the mean temperature for the day is above 42°F. No degree days are counted when the mean temperature is below 42°F.
[d]Norms are based on a period of 10-24 years during 1931-1960. No adjustment factor has been used.
[e]Extremes are for 40-49 years.
[f]Norms are based on a full 10-year period, 1951-1960, adjusted to the standard normal period 1931-1960.
[g]Extremes are for 20-29 years.

Source: Temperature and Precipitation Tables for Prairie Provinces, Vol. III, Canada Dept. of Transport, Meteorological Branch, Toronto, Ontario, 1967.
"Growing Degree-Day Normals Above 42°F Based on the Period 1953-1967" by D. Aston, Canada Dept. of Transport, Meteorological Branch, Toronto, Ontario, June, 1969.

Precipitation

Table 2.2 shows monthly and annual average precipitation averages in terms of rainfall, snowfall and total at three meteorological stations. Annual average precipitation ranges from 13.9 inches at Saskatoon to 15.8 inches at Prince Albert, with 62 percent of annual precipitation at all three centers occurring in the five-month period May to September. Also, June is the highest precipitation month for all centers, and 69 percent of annual precipitation is in the form of rain.

TABLE 2.2 MONTHLY AND ANNUAL AVERAGE PRECIPITATION FOR SPECIFIED METEOROLOGICAL STATIONS

Meteorological Station	January	February	March	April	May	June	July	August	September	October	November	December	Year
						- inches -							
Prince Albert Airport													
Mean Rainfall[a]	0.01	0.01	0.02	0.49	1.47	2.59	2.23	1.93	1.37	0.59	0.11	0.01	10.83
Mean Snowfall[a]	7.0	6.0	6.9	5.3	1.1	0.0	0.0	0.0	0.5	3.7	9.4	9.3	49.2
Mean Total Precipitation[b]	0.71	0.61	0.71	1.02	1.58	2.59	2.23	1.93	1.42	0.96	1.05	0.94	15.75
Rosthern													
Mean Rainfall[c]	0.00	0.00	0.05	0.49	0.99	2.55	2.09	1.86	1.41	0.47	0.06	0.02	9.99
Mean Snowfall[c]	6.0	5.0	7.6	4.4	0.2	0.0	0.0	0.0	0.2	3.9	8.2	8.4	43.9
Mean Total Precipitation[b]	0.60	0.50	0.81	0.93	1.01	2.55	2.09	1.86	1.43	0.86	0.88	0.86	14.38
Saskatoon Airport													
Mean Rainfall[c]	Trace	0.01	0.02	0.50	1.25	2.04	2.02	1.88	1.26	0.39	0.14	0.03	9.54
Mean Snowfall[c]	7.4	7.2	6.3	4.3	0.9	Trace	0.0	0.0	0.6	2.9	6.7	6.9	43.2
Mean Total Precipitation[b]	0.74	0.73	0.65	0.93	1.34	2.04	2.02	1.88	1.32	0.68	0.81	0.72	13.86

[a]Norms are based on a full 30-year period from 1931-1960.

[b]Total precipitation measured in inches of rain. Ten inches of snow equals one inch of rain.

[c]Norms are based on a period of 10-24 years during the period 1931-1960. No adjustment factor has been used.

Source: Temperature and Precipitation Tables for Prairie Provinces, Vol. III, Canada Dept. of Transport, Meteorological Branch, Toronto, Ontario, 1967.

Hail Insurance

Information regarding annual number of claims filed, acres insured and acres on which damage was claimed by municipality is shown in Table 2.3, as experienced by Saskatchewan Municipal Hail Insurance Association. Over the ten-year period 1962 to 1971 an average of 160,480.4 acres were insured each year, and claims for crop damage on acres insured ranged from 2.6 percent in the municipality of Duck Lake to 13.7 percent in the municipality of Blaine Lake. Claims for crop damage were received on an average of 14,204.2 acres or 8.9 percent of insured acres during the same ten-year period. The percent of insured acres on which damage was claimed ranged from 0.7 percent in 1969 to 24.7 percent in 1963. Notably, Duck Lake, Blaine Lake and Buckland had less than one claim per year, on the average.

TABLE 2.3 SASKATCHEWAN MUNICIPAL HAIL INSURANCE: NUMBER OF CLAIMS FILED, ACRES INSURED AND ACRES ON WHICH DAMAGE CLAIMED IN THE STUDY AREA, 1962 TO 1971

Rural Municipality	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	Avg./Yr.
344. Cory[a]											
Number of Claims Filed	46	118	9	0	18	2	12	0	-	-	25.6
Acres Insured	38,748	44,573	44,033	46,937	47,111	112,331	111,910	87,344	-	-	66,623.4
Acres on Which Damage Claimed	7,075	20,588	1,070	0	2,946	256	2,480	0	-	-	4,301.9
Percent	18.3	46.2	2.4	0	6.3	0.2	2.2	0	-	-	6.5
374. Warman[a]											
Number of Claims Filed	106	57	54	20	0	89	1	8	-	-	41.9
Acres Insured	40,534	44,507	46,515	48,088	47,827	48,789	46,786	44,075	-	-	45,890.1
Acres on Which Damage Claimed	14,054	8,985	7,063	2,415	0	14,379	60	718	-	-	5,959.2
Percent	34.7	20.2	15.2	5.0	0	29.5	0.1	1.6	-	-	13.0
344. Corman Park[a]											
Number of Claims Filed	-	-	-	-	-	-	-	-	43	54	48.5
Acres Insured	-	-	-	-	-	-	-	-	66,217	94,060	80,138.5
Acres on Which Damage Claimed	-	-	-	-	-	-	-	-	6,623	7,283	6,953.0
Percent	-	-	-	-	-	-	-	-	10.0	7.7	8.7
403. Rosthern											
Number of Claims Filed	9	12	3	28	6	29	0	8	16	17	12.8
Acres Insured	5,978	12,340	16,113	17,766	18,270	17,884	19,115	27,713	22,453	31,234	18,886.6
Acres on Which Damage Claimed	1,681	1,374	280	3,869	825	5,047	0	684	1,592	1,859	1,721.1
Percent	28.1	11.1	1.7	21.8	4.5	28.2	0	2.5	7.1	6.0	9.1
404. Laird											
Number of Claims Filed	3	11	19	4	15	31	10	1	14	30	13.8
Acres Insured	7,953	26,010	29,381	32,901	32,487	28,830	23,659	32,049	21,009	32,121	26,640.0
Acres on Which Damage Claimed	343	1,090	1,892	805	3,494	6,454	1,573	33	1,530	5,581	2,279.5
Percent	4.3	4.2	6.4	2.4	10.8	22.4	6.6	0.1	7.3	17.4	8.6
461. Prince Albert											
Number of Claims Filed	0	2	0	8	0	0	1	0	0	4	1.5
Acres Insured	2,444	5,048	3,779	6,197	5,520	4,750	5,994	5,749	4,159	6,295	4,993.5
Acres on Which Damage Claimed	0	690	0	1,064	0	0	500	0	0	933	318.7
Percent	0	13.7	0	17.2	0	0	8.3	0	0	14.8	6.4
463. Duck Lake											
Number of Claims Filed	0	0	0	1	0	0	0	0	1	0	0.2
Acres Insured	0	140	0	285	0	1,505	2,623	3,538	2,246	4,188	1,452.5
Acres on Which Damage Claimed	0	0	0	155	0	0	0	0	215	0	37.0
Percent	0	0	0	54.4	0	0	0	0	9.6	0	2.6

See footnotes at end of table

(continued)

TABLE 2.3 SASKATCHEWAN MUNICIPAL HAIL INSURANCE: NUMBER OF CLAIMS FILED, ACRES INSURED AND ACRES ON WHICH DAMAGE CLAIMED IN THE STUDY AREA, 1962 TO 1971 (concluded)

Rural Municipality	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	Avg./Yr.
491. Buckland											
Number of Claims Filed	0	0	0	2	0	0	0	1	0	1	0.4
Acres Insured	552	0	140	501	750	1,762	3,334	2,488	1,769	2,030	1,332.6
Acres on Which Damage Claimed	0	0	0	155	0	0	0	50	0	725	93.0
Percent	0	0	0	30.9	0	0	0	2.0	0	35.7	7.0
434. Blaine Lake											
Number of Claims Filed	1	0	0	0	1	0	1	1	1	2	0.7
Acres Insured	1,255	0	182	324	215	279	2,081	2,801	1,993	2,237	1,136.7
Acres on Which Damage Claimed	123	0	0	0	215	0	230	25	301	660	155.4
Percent	9.8	0	0	0	100.0	0	11.1	0.9	15.1	29.5	13.7
Total Study Area											
Number of Claims Filed	165	200	85	63	40	151	25	19	75	108	93.1
Acres Insured	97,464	132,618	140,143	152,999	152,180	216,130	215,502	205,757	119,846	172,165	160,480.4
Acres on Which Damage Claimed	23,276	32,727	10,305	8,463	7,480	26,136	4,843	1,510	10,261	17,041	14,204.2
Percent	23.9	24.7	7.4	5.5	4.9	12.1	2.3	0.7	8.6	9.9	8.9

[a]Rural municipalities 344. Cory and 374. Warman disorganized Dec. 31, 1969 to become part of 344. Corman Park, Jan. 1, 1970.

Source: Saskatchewan Municipal Hail Insurance Association, Regina, Saskatchewan.

Sales of Farm Land in the Study Area

An indication of farm land transactions in the study area is provided by data in Table 2.4. In the nine-year period 1963-71, 283 transactions were recorded involving an average of 227 acres per transaction. These transactions are representative in the sense that family and other types of deals involving concessions or a premium (e.g. farm land adjacent to a town and possibly purchased for non-agricultural use) were excluded from the tabulations.

Prices steadily increased and had more than doubled by 1968, which showed an average of $91.44 and a high of $150.00 per acre. Since then the prices have dropped. In 1963, the first year in the series, prices were lowest averaging $43.36 with a high of $78.22 per acre. Many factors enter into determining farm land values. Superficially, at least the following three factors could be cited in explaining the observed price levels: soil classification, general inflation and grain marketing situation. Class 1 or 2 land is generally higher priced relative to Class 3 or 4. General economic inflation is in time reflected in rising land values. Finally, when grain marketings keep pace with production there is an upward pressure on land values but when the supply of grain becomes too large relative to demand, the pressure on land values is downward. The latter situation occurred following the 1968-69 crop year.

TABLE 2.4 REPRESENTATIVE LAND VALUES BY SALES PRICE PER ACRE, 1963 TO 1971

Year	Number of Transactions	Total Acreage	Price per Acre[a]		
			Low	High	Average
			$	$	$
1963	18	4,143	17.06	78.22	43.36
1964	37	8,073	12.50	107.59	53.45
1965	54	11,643	18.75	125.71	58.60
1966	49	11,341	25.00	125.00	79.84
1967	49	11,795	21.88	148.44	82.19
1968	27	6,127	12.81	150.00	91.44
1969	17	3,745	32.08	137.93	80.97
1970	11	2,532	50.00	125.00	86.49
1971	21	4,830	26.53	126.06	73.62

[a]Less improvements.

Source: Farm Credit Corporation, Regina, Saskatchewan.

Land Use of Grain Farm Acreage

The number of acres associated with each delivery point and land use are shown in detail for three crop years in Tables 2.5, 2.6 and 2.7. Between 1962-63 and 1969-70 farm acreage in the study area decreased 23,985 acres or 2.2 percent. During the same time specified acres increased slightly by 7,662 acres or 0.9 percent. Arma and Warman closed during this period giving up 28,688 acres to neighboring points.

In general, smaller communities experienced decreased acreages while larger communities experienced increases.[1] With the exceptions of Clouston, Davis and Carlton, the hinterland sizes of all delivery points Too Small to Classify, all Hamlets, Villages and even Towns decreased. The percentage decreases of each classification group are as follows: Too Small to Classify 21.9 percent, Hamlets 6.6 percent, Villages 36.0 percent and Towns 11.4 percent. Total acreage of the two Greater Towns increased 15.0 percent and Prince Albert experienced a 32.3 percent increase.

Relatively little change occurred in the land use pattern between 1962-63 and 1969-70 in the study area. Cropping practices followed a three-year rotation with about 30 percent wheat, 25-30 percent summer fallow and the remaining 40-45 percent in other crops and unimproved land. The largest relative changes occurred in acreages devoted to flax and rapeseed. Flax acreage increased by more than nine times and rapeseed by nearly four and one half times. Total unimproved land decreased by 57,095 acres or by 4.8 percentage points.

Substantial changes occurred, however, in the land use pattern in 1970-71 primarily as a result of the Federal Government's "Operation LIFT" program designed to reduce Canada's wheat surplus.[2] The greatest absolute changes from 1969-70 to 1970-71 occurred in hard spring wheat which dropped by 188,782 acres or 65.3 percent, and in summer fallow which increased 104,070 acres or 33.0 percent. Rapeseed acreage more than doubled and flax increased by 59.3 percent.

It should be noted that "specified acres" as such disappeared in the 1970-71 crop year under Operation LIFT; however, a subtotal in Table 2.7 of those same crops that comprised specified acres in 1969-70 is shown for comparison purposes. In the study area this acreage decreased 5.1 percentage points.

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[1]The interested reader may wish to compare this data with that contained in Tables 3.2 and 3.15 which show changes in number of delivery permits issued and average farm to elevator hauling distance.

[2]LIFT is an acronym derived from "Lower Inventory For Tomorrow".

TABLE 2.5 LAND USE OF GRAIN FARM ACREAGE BY DELIVERY POINT, 1962-63

Delivery Point	Wheat	Oats	Barley	Rye	Summer fallow	Forage Crops	Specified Acres (Subtotal)	Durum	Flax	Rapeseed	Other Crops	Uncult. Land	Total
Too Small to Classify													
1 Arma													
Acres	3,482	1,387	10	220	2,739	161	7,999	1	-	-	-	2,322	10,322
Percent	33.7	13.5	0.1	2.1	26.5	1.6	77.5	0.0	-	-	-	22.5	100.0
2 La Plaine													
Acres	5,545	1,612	1,614	284	5,419	1,736	16,210	-	-	50	314	5,293	21,867
Percent	25.4	7.4	7.4	1.3	24.8	7.9	74.1	-	-	0.2	1.4	24.2	100.0
3 Red Deer Hill													
Acres	7,108	2,521	1,564	32	6,645	1,647	19,517	-	77	193	222	6,901	26,910
Percent	26.4	9.4	5.8	0.1	24.7	6.1	72.5	-	0.3	0.7	0.8	25.7	100.0
4 Clouston													
Acres	4,087	2,231	2,892	195	6,173	1,042	16,620	-	30	1,069	8	5,530	23,257
Percent	17.6	9.6	12.4	0.8	26.5	4.5	71.5	-	0.1	4.6	0.0	23.9	100.0
Hamlets													
5 Davis													
Acres	7,303	1,540	1,288	-	6,938	500	17,569	-	144	615	579	5,666	24,573
Percent	29.7	6.3	5.2	-	28.2	2.0	71.5	-	0.6	2.5	2.4	23.1	100.0
6 Mennon													
Acres	12,456	4,030	183	35	10,502	752	27,958	48	-	15	99	3,568	31,688
Percent	39.3	12.7	0.6	0.1	33.1	2.4	88.2	0.2	-	0.0	0.3	11.3	100.0
7 Carlton													
Acres	18,132	3,938	3,066	1,561	15,477	2,133	44,307	237	75	936	167	15,480	61,202
Percent	29.6	6.4	5.0	2.6	25.3	3.5	72.4	0.4	0.1	1.5	0.3	25.3	100.0
Villages													
8 MacDowall													
Acres	5,004	2,909	2,305	208	6,203	2,286	18,915	-	-	317	434	13,056	32,722
Percent	15.3	8.9	7.0	0.6	19.0	7.0	57.8	-	-	1.0	1.3	39.9	100.0
9 Osler													
Acres	9,684	9,323	280	1,011	11,257	268	31,823	10	-	-	605	9,348	41,786
Percent	23.2	22.3	0.7	2.4	26.9	0.6	76.2	0.1	-	-	1.4	22.4	100.0
10 Dalmeny													
Acres	19,351	10,053	288	193	16,940	1,094	47,919	-	-	-	95	10,933	58,947
Percent	32.8	17.1	0.5	0.3	28.7	1.9	81.3	-	-	-	0.2	18.5	100.0
11 Laird													
Acres	20,875	6,708	1,080	-	14,256	2,059	44,978	285	57	291	211	5,673	51,495
Percent	40.5	13.0	2.1	-	27.7	4.0	87.3	0.6	0.1	0.6	0.4	11.0	100.0
12 Warman													
Acres	3,487	3,957	465	750	3,467	1,522	13,648	-	35	-	10	4,673	18,366
Percent	19.0	21.5	2.5	4.1	18.9	8.3	74.3	-	0.2	-	0.1	25.4	100.0
13 Hepburn													
Acres	22,035	8,367	410	-	15,424	925	47,161	-	-	-	293	6,612	54,066
Percent	40.8	15.5	0.8	-	28.5	1.7	87.2	-	-	-	0.5	12.2	100.0

(continued)

TABLE 2.5 LAND USE OF GRAIN FARM ACREAGE BY DELIVERY POINT, 1962-63 (concluded)

Delivery Point	Wheat	Oats	Barley	Rye	Summer fallow	Forage Crops	Specified Acres (Subtotal)	Durum	Flax	Rapeseed	Other Crops	Uncult. Land	Total
Towns													
14 Hague													
Acres	26,868	12,773	556	2,907	22,771	1,769	67,644	-	45	-	444	13,775	81,908
Percent	32.8	15.6	0.7	3.5	27.8	2.2	82.6	-	0.1	-	0.5	16.8	100.0
15 Langham													
Acres	20,040	6,752	1,340	1,535	19,727	1,687	51,081	22	-	-	150	12,846	64,099
Percent	31.3	10.5	2.1	2.4	30.8	2.6	79.7	0.0	-	-	0.2	20.1	100.0
16 Duck Lake													
Acres	9,949	3,955	2,844	3,649	11,684	4,691	36,772	-	-	150	473	22,175	59,570
Percent	16.7	6.6	4.8	6.1	19.6	7.9	61.7	-	-	0.3	0.8	37.2	100.0
17 Waldheim													
Acres	24,607	8,930	581	157	19,077	2,022	55,374	653	-	140	128	9,013	65,308
Percent	37.7	13.7	0.9	0.2	29.2	3.1	84.8	1.0	-	0.2	0.2	13.8	100.0
Greater Towns													
18 Blaine Lake													
Acres	46,738	6,633	2,617	1,063	31,357	2,070	90,478	-	15	53	191	19,799	110,536
Percent	42.3	6.0	2.3	1.0	28.4	1.9	81.9	-	0.0	0.0	0.2	17.9	100.0
19 Rosthern													
Acres	27,226	11,668	881	2,834	24,391	5,214	72,214	362	75	83	328	24,445	97,507
Percent	27.9	12.0	0.9	2.9	25.0	5.3	74.1	0.4	0.1	0.1	0.3	25.1	100.0
Cities													
20 Prince Albert													
Acres	40,474	12,010	12,585	1,608	39,668	7,347	113,692	50	42	2,691	1,100	37,942	155,517
Percent	26.1	7.7	8.1	1.0	25.6	4.7	73.1	0.0	0.0	1.7	0.7	24.4	100.0
Study Area Total													
Acres	334,451	121,297	36,849	18,242	290,115	40,925	841,879	1,668	595	6,603	5,851	235,050	1,091,646
Percent	30.6	11.1	3.4	1.7	26.6	3.7	77.1	0.2	0.1	0.6	0.5	21.5	100.0
Saskatchewan Total													
Acres	15,454,942	3,260,029	1,806,685	359,911	17,922,504	1,755,699	40,559,770	2,706,327	346,557	151,889	257,875	12,195,975	56,218,393
Percent	27.5	5.8	3.2	0.6	31.9	3.1	72.1	4.8	0.6	0.3	0.5	21.7	100.0

Source: Canadian Wheat Board, Winnipeg.

TABLE 2.6 LAND USE OF GRAIN FARM ACREAGE BY DELIVERY POINT, 1969-70

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer fallow	Forage Crops	Specified Acres (Subtotal)	Flax	Rapeseed	Other Crops	Uncult. Land	Total
Too Small to Classify													
1 Arma													
Acres	Storage only												
Percent													
2 La Plaine													
Acres	2,955	-	545	1,066	153	3,320	609	8,648	15	220	102	2,558	11,543
Percent	25.6	-	4.7	9.2	1.3	28.8	5.3	74.9	0.1	1.9	0.9	22.2	100.0
3 Red Deer Hill													
Acres	6,354	-	1,488	2,061	10	9,282	1,829	21,024	247	1,060	57	3,949	26,337
Percent	24.1	-	5.7	7.8	0.1	35.2	6.9	79.8	0.9	4.1	0.2	15.0	100.0
4 Clouston													
Acres	4,535	-	2,257	4,137	605	7,673	1,126	20,333	45	1,102	141	4,863	26,484
Percent	17.1	-	8.5	15.6	2.3	29.0	4.3	76.8	0.1	4.2	0.5	18.4	100.0
Hamlets													
5 Davis													
Acres	5,554	-	1,142	3,432	685	8,231	1,436	20,480	219	834	312	3,429	25,274
Percent	21.9	-	4.5	13.6	2.7	32.6	5.7	81.0	0.9	3.3	1.2	13.6	100.0
6 Mennon													
Acres	5,561	40	2,368	571	-	6,267	303	15,110	85	30	99	1,526	16,850
Percent	33.0	0.2	14.1	3.4	-	37.2	1.8	89.7	0.5	0.2	0.6	9.0	100.0
7 Carlton													
Acres	17,364	65	3,401	3,488	1,495	18,462	4,171	48,446	93	6,187	398	12,499	67,623
Percent	25.7	0.1	5.0	5.2	2.2	27.3	6.2	71.7	0.1	9.1	0.6	18.5	100.0
Villages													
8 MacDowall													
Acres	3,994	-	1,530	2,822	120	5,638	3,756	17,860	25	911	732	8,553	28,081
Percent	14.2	-	5.5	10.1	0.4	20.1	13.4	63.7	0.1	3.2	2.6	30.4	100.0
9 Osler													
Acres	5,324	40	7,357	713	314	6,264	2,281	22,293	-	-	75	5,504	27,872
Percent	19.1	0.1	26.4	2.6	1.1	22.5	8.2	80.0	-	-	0.3	19.7	100.0
10 Dalmeny													
Acres	17,194	212	10,089	1,619	60	19,583	1,916	50,673	704	255	40	6,758	58,430
Percent	29.4	0.3	17.3	2.8	0.1	33.5	3.3	86.7	1.2	0.4	0.1	11.6	100.0
11 Laird													
Acres	14,874	70	4,397	3,941	-	16,326	1,426	41,034	249	4,558	41	4,492	50,374
Percent	29.6	0.1	8.7	7.8	-	32.4	2.8	81.4	0.5	9.1	0.1	8.9	100.0
12 Warman													
Acres	Storage only												
Percent													
13 Hepburn													
Acres	15,316	15	6,130	2,262	240	14,501	1,108	39,572	75	250	-	3,930	43,827
Percent	34.9	0.0	14.0	5.2	0.5	33.1	2.5	90.2	0.2	0.6	-	9.0	100.0

(continued)

TABLE 2.6 LAND USE OF GRAIN FARM ACREAGE BY DELIVERY POINT, 1969-70 (concluded)

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer fallow	Forage Crops	Specified Acres (Subtotal)	Flax	Rapeseed	Other Crops	Uncult. Land	Total
Towns													
14 Hague													
Acres	17,392	-	10,316	2,033	1,916	19,392	3,955	55,004	87	-	456	9,526	65,073
Percent	26.7	-	15.9	3.1	2.9	29.8	6.1	84.5	0.1	-	0.7	14.7	100.0
15 Langham													
Acres	18,262	902	5,449	3,633	1,783	18,963	2,730	51,722	123	110	327	11,039	63,321
Percent	28.8	1.4	8.6	5.8	2.8	30.0	4.3	81.7	0.2	0.2	0.5	17.4	100.0
16 Duck Lake													
Acres	7,547	-	3,371	3,128	1,596	10,919	5,746	32,307	204	1,277	406	13,954	48,148
Percent	15.7	-	7.0	6.5	3.3	22.7	11.9	67.1	0.4	2.7	0.8	29.0	100.0
17 Waldheim													
Acres	20,904	110	8,576	5,165	261	20,578	1,005	56,599	75	698	45	5,940	63,357
Percent	33.0	0.2	13.5	8.1	0.4	32.5	1.6	89.3	0.1	1.1	0.1	9.4	100.0
Greater Towns													
18 Blaine Lake													
Acres	46,561	430	5,569	5,788	1,951	37,728	3,653	101,680	2,587	2,181	705	19,579	126,732
Percent	36.7	0.3	4.4	4.6	1.5	29.8	2.9	80.2	2.0	1.7	0.6	15.5	100.0
19 Rosthern													
Acres	29,940	195	9,904	4,448	1,653	31,640	9,458	87,238	155	1,576	606	23,003	112,578
Percent	26.5	0.2	8.9	4.0	1.5	28.1	8.4	77.6	0.1	1.4	0.5	20.4	100.0
Cities													
20 Prince Albert													
Acres	49,310	-	12,900	20,110	2,984	60,769	13,445	159,518	477	7,807	1,102	36,853	205,757
Percent	23.9	-	6.3	9.8	1.5	29.5	6.5	77.5	0.2	3.9	0.5	17.9	100.0
Study Area Total													
Acres	288,941	2,079	96,789	70,417	15,826	315,536	59,953	849,541	5,465	29,056	5,644	177,955	1,067,661
Percent	27.0	0.2	9.1	6.6	1.5	29.6	5.6	79.6	0.5	2.7	0.5	16.7	100.0
Saskatchewan Total													
Acres	15,872,495	2,606,821	2,398,645	2,984,539	518,900	19,211,660	2,108,161	45,701,221	678,036	821,577	270,865	9,682,344	57,154,043
Percent	27.8	4.6	4.2	5.2	0.9	33.6	3.7	80.0	1.2	1.4	0.5	16.9	100.0

Source: Canadian Wheat Board, Winnipeg.

TABLE 2.7 LAND USE OF GRAIN FARM ACREAGE BY DELIVERY POINT, 1970-71

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer fallow	Forage Crops	Subtotal	Flax	Rapeseed	Other Crops	Uncult. Land	Total
Too Small to Classify													
1 Arma													
Acres	Storage only												
Percent													
2 La Plaine													
Acres	813	-	406	969	50	4,271	901	7,410	35	1,171	122	3,740	12,478
Percent	6.5	-	3.3	7.8	0.4	34.2	7.2	59.4	0.3	9.4	0.9	30.0	100.0
3 Red Deer Hill													
Acres	1,325	-	2,302	2,466	50	9,066	2,224	17,433	460	3,407	230	3,872	25,402
Percent	5.2	-	9.1	9.7	0.2	35.7	8.8	68.7	1.8	13.4	0.9	15.2	100.0
4 Clouston													
Acres	1,413	-	1,665	3,877	600	9,384	1,823	18,762	337	3,143	-	4,966	27,208
Percent	5.2	-	6.1	14.3	2.2	34.5	6.7	69.0	1.2	11.6	-	18.2	100.0
Hamlets													
5 Davis													
Acres	1,819	-	1,124	3,010	70	9,690	1,867	17,580	435	3,039	215	3,215	24,484
Percent	7.4	-	4.6	12.3	0.3	39.6	7.6	71.8	1.8	12.4	0.9	13.1	100.0
6 Mennon													
Acres	1,666	204	2,575	1,182	-	8,900	706	15,233	238	262	44	1,780	17,557
Percent	9.5	1.2	14.7	6.7	-	50.7	4.0	86.8	1.4	1.5	0.2	10.1	100.0
7 Carlton													
Acres	4,113	319	3,695	4,388	1,062	24,378	4,962	42,917	476	8,602	85	13,503	65,583
Percent	6.3	0.5	5.6	6.7	1.6	37.2	7.6	65.5	0.7	13.1	0.1	20.6	100.0
Villages													
8 MacDowall													
Acres	1,394	-	1,850	2,811	-	6,051	4,018	16,124	50	1,149	49	7,838	25,210
Percent	5.5	-	7.3	11.2	-	24.0	15.9	63.9	0.2	4.6	0.2	31.1	100.0
9 Osler													
Acres	3,086	-	7,774	1,299	237	8,815	4,085	25,296	-	25	48	5,844	31,213
Percent	9.9	-	24.9	4.2	0.8	28.2	13.1	81.1	-	0.1	0.1	18.7	100.0
10 Dalmeny													
Acres	4,728	799	9,622	2,771	55	28,339	3,080	49,394	411	1,513	94	6,541	57,953
Percent	8.2	1.3	16.6	4.8	0.1	48.9	5.3	85.2	0.7	2.6	0.2	11.3	100.0
11 Laird													
Acres	3,558	30	4,282	5,253	-	21,549	1,755	36,427	70	9,744	80	4,596	50,917
Percent	7.0	0.1	8.4	10.3	-	42.3	3.5	71.6	0.1	19.1	0.2	9.0	100.0
12 Warman													
Acres	Closed												
Percent													
13 Hepburn													
Acres	6,184	85	5,802	4,189	400	20,728	1,517	38,905	75	935	78	4,268	44,261
Percent	14.0	0.2	13.1	9.5	0.9	46.8	3.4	87.9	0.2	2.1	0.2	9.6	100.0

(continued)

TABLE 2.7 LAND USE OF GRAIN FARM ACREAGE BY DELIVERY POINT, 1970-71 (concluded)

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer fallow	Forage Crops	Subtotal	Flax	Rapeseed	Other Crops	Uncult. Land	Total
Towns													
14 Hague													
Acres	10,058	156	10,939	3,919	1,887	25,183	5,610	57,750	346	395	106	10,367	68,966
Percent	14.6	0.2	15.9	5.7	2.7	36.5	8.1	83.7	0.5	0.6	0.2	15.0	100.0
15 Langham													
Acres	9,595	957	6,120	4,210	1,042	27,870	3,538	53,332	424	288	35	11,459	65,538
Percent	14.6	1.5	9.3	6.4	1.6	42.5	5.4	81.3	0.7	0.4	0.1	17.5	100.0
16 Duck Lake													
Acres	2,924	-	3,040	2,966	1,470	11,792	7,265	29,457	33	2,199	205	12,594	44,488
Percent	6.6	-	6.8	6.7	3.3	26.5	16.3	66.2	0.1	4.9	0.5	28.3	100.0
17 Waldheim													
Acres	6,841	478	7,452	7,108	313	29,540	1,987	53,719	462	3,098	4	6,254	63,537
Percent	10.8	0.8	11.7	11.2	0.5	46.5	3.1	84.6	0.7	4.9	0.0	9.8	100.0
Greater Towns													
18 Blaine Lake													
Acres	12,354	793	5,351	8,595	1,614	55,143	6,262	90,112	3,939	10,153	298	19,579	124,081
Percent	10.0	0.6	4.3	6.9	1.3	44.4	5.1	72.6	3.2	8.2	0.2	15.8	100.0
19 Rosthern													
Acres	11,995	115	10,085	6,150	2,216	42,415	13,159	86,135	361	6,093	544	24,544	117,677
Percent	10.2	0.1	8.6	5.2	1.9	36.0	11.2	73.2	0.3	5.2	0.4	20.9	100.0
Cities													
20 Prince Albert													
Acres	16,293	-	11,219	20,778	2,989	76,492	17,480	145,251	556	24,054	916	38,782	209,559
Percent	7.8	-	5.4	9.9	1.4	36.5	8.3	69.3	0.3	11.5	0.4	18.5	100.0
Study Area Total													
Acres	100,159	3,936	95,303	85,941	14,055	419,606	82,239	801,237	8,708	79,270	3,153	183,742	1,076,112
Percent	9.3	0.4	8.9	8.0	1.3	39.0	7.6	74.5	0.8	7.3	0.3	17.1	100.0
Saskatchewan Total													
Acres	6,436,002	2,413,010	2,180,831	3,545,101	426,360	25,050,593	3,000,609	43,052,506	1,516,244	2,163,118	193,066	10,201,869	57,126,803
Percent	11.3	4.2	3.8	6.2	0.7	43.9	5.3	75.4	2.6	3.8	0.3	17.9	100.0

Source: Canadian Wheat Board, Winnipeg.

Crop Yields

Detailed crop yield data for each delivery point are shown in Table 2.8. Where available, the ten-year high, low, range and average yields of spring wheat, durum, oats, barley and flaxseed are given.

The yields of spring wheat and durum were very similar, with average yields in the study area of 23.0 and 22.5 bushels per acre respectively. Average yields of the other grains shown were oats 44.4, barley 34.0 and flaxseed 14.0 bushels per acre. A large degree of variability in yields is apparent from Table 2.8. The range between high and low yields for each grain is approximately one and a half times the ten-year average yield value. For example, the range of 52 bushels per acre for barley is slightly more than 1.5 times the ten-year average value of 34.0 bushels per acre. The range in flax yields is nearly twice its ten-year average. Of course, this relationship for a particular delivery point is not as pronounced as for the study area as a whole.

TABLE 2.8 TEN-YEAR AVERAGE YIELDS OF SPRING WHEAT, DURUM, OATS, BARLEY AND FLAXSEED BY DELIVERY POINT, 1962-1971

Delivery Point	Spring Wheat				Durum				Oats				Barley				Flaxseed			
	High	Low	Range	Ten-Year Average	High	Low	Range	Ten-Year Average	High	Low	Range	Ten-Year Average	High	Low	Range	Ten-Year Average	High	Low	Range	Ten-Year Average
	- bushels per acre -																			
Too Small to Classify																				
1 Arma	29	15	14	21.5[f]	4	4	0	4.0[a]	70	20	50	43.8[f]	50	25	25	36.3[d]	-	-	-	-
2 La Plaine	45	20	25	31.1[i]	-	-	-	-	60	25	35	46.1[i]	50	30	20	37.8[i]	18	15	3	16.5[b]
3 Red Deer Hill	35	14	21	25.8	-	-	-	-	65	15	50	44.0	60	20	40	41.5	20	15	5	16.7[c]
4 Clouston	28	15	13	23.9	-	-	-	-	70	30	40	48.0	45	22	23	31.8	15	15	0	15.0[a]
Hamlets																				
5 Davis	25	6	19	19.8[i]	26	26	0	26.0[a]	65	10	55	40.0	55	10	45	36.0	20	10	10	14.3[h]
6 Mennon	35	15	20	27.3	35	30	5	32.5[b]	75	30	45	53.5	60	25	35	39.5	30	20	10	23.3[c]
7 Carlton	30	12	18	23.3	30	20	10	25.0[c]	50	20	30	44.5	40	15	25	30.7	15	10	5	13.4[e]
Villages																				
8 MacDowall	30	20	10	23.7	-	-	-	-	50	30	20	37.7	45	25	20	33.4	20	20	0	20.0[a]
9 Osler	30	10	20	20.6[i]	22	22	0	22.0[a]	50	18	32	40.6[i]	45	15	30	29.7[i]	-	-	-	-
10 Dalmeny	30	13	17	24.2[i]	25	15	10	21.7[c]	70	20	50	47.8[i]	50	10	40	30.0[i]	20	10	10	16.7[c]
11 Laird	30	15	15	23.9[f]	25	20	5	22.3[d]	60	20	40	43.0	50	15	35	33.5	12	10	2	11.0[b]
12 Warman	25	15	10	19.5	-	-	-	-	60	20	40	40.8	45	20	25	30.8	-	-	-	-
13 Hepburn	35	15	20	24.1	30	30	0	30.0[b]	80	20	60	48.5	45	15	30	28.5	15	10	5	12.3[c]
Towns																				
14 Hague	28	12	16	21.0	20	8	12	14.0[b]	60	20	40	45.5	50	15	35	34.5	20	10	10	16.3[d]
15 Langham	30	10	20	23.2	30	12	18	22.1[g]	55	15	40	41.5	55	20	35	39.0	20	15	5	17.7[c]
16 Duck Lake	22	7	15	17.3	-	-	-	-	60	14	46	38.9	50	9	41	30.3	12	10	2	11.0[b]
17 Waldheim	35	12	23	25.2	35	15	20	26.3[d]	75	20	55	51.0	60	15	45	35.5	20	15	5	18.3[c]
Greater Towns																				
18 Blaine Lake	30	10	20	20.2	30	10	20	19.3[f]	60	10	50	41.5	45	10	35	34.5	20	5	15	12.1[i]
19 Rosthern	35	15	20	24.0	30	20	10	26.7[c]	70	30	40	45.0	60	20	40	36.0	20	10	10	13.4[e]
Cities																				
20 Prince Albert	30	7	23	22.3	15	15	0	15.0[a]	70	8	62	40.3	40	8	32	31.3	15	4	11	10.6[i]
Study Area Total	45	6	39	23.0[j]	35	4	31	22.5[j]	80	8	72	44.4[j]	60	8	52	34.0[j]	30	4	26	14.0[j]

[a] 1-year average
[b] 2-year average
[c] 3-year average
[d] 4-year average
[e] 5-year average
[f] 6-year average
[g] 7-year average
[h] 8-year average
[i] 9-year average
[j] Calculated as an average of the above averages weighted by the number of years each represents

Source: Canadian Wheat Board, Winnipeg.

Protein Content of Wheat

The percentage of protein content in hard red spring wheat has recently become more important in the grading and marketing of wheat. Regulations under the new Canada Grain Act incorporate protein content in the new grading system. While there are other quality factors to consider, protein content is closely watched by millers and bakers.

Table 2.9 shows the protein content for samples of wheat by delivery point over a ten-year period. Also shown are study area and provincial totals. It can be seen from the data that protein content varies considerably from year to year and from region to region. On the average, protein levels in Saskatchewan and in the study area were highest in 1964 and lowest in 1966. The lowest percentage recorded in the study area was 9.7 percent at Davis in 1962. This was still above the provincial low of 8.6 that year. The highest level recorded was 18.7 percent at Hepburn in 1964 but this was below the provincial high of 19.3 percent in the same year. The majority of the readings are in the 13 to 15 percent range. The annual averages ranged from 11.4 to 16.9 percent in 1966 and 1964, respectively. Both values were recorded at Red Deer Hill. However, the low 11.4 average is based on only one sample, which points out the need for caution when reading these data. The number of samples at each delivery point in any one year ranges from 1 to 11 with the majority being in the neighbourhood of three to five samples.

TABLE 2.9 PROTEIN CONTENT OF HARD RED SPRING WHEAT BY DELIVERY POINT, 1962 TO 1971

Delivery Point	1962		1963		1964		1965		1966		1967		1968		1969		1970		1971	
	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
	- percent -																			
Too Small to Classify																				
1 Arma	n.a.	n.a.	12.6	10.9-14.2	15.3	-	13.1	11.7-14.2	12.5	-	n.a.	n.a.	*		*		*		Closed	
2 La Plaine	13.4	13.1-13.8	13.5	-	16.6	16.5-16.8	14.7	13.8-15.6	12.6	11.3-14.0	15.1	14.8-15.5	14.6	13.7-15.4	14.3	12.9-15.7	13.6	12.6-14.5	Closed	
3 Red Deer Hill	14.2	12.8-16.2	14.1	-	16.9	16.4-17.2	14.2	13.8-14.5	11.4	-	16.0	-	15.1	-	15.4	-	14.2	-	14.4	-
4 Clouston	14.8	13.9-15.4	13.6	13.2-14.2	16.6	-	14.3	14.2-14.4	12.3	-	15.6	14.3-16.4	13.6	10.8-15.3	14.3	11.7-15.7	13.5	13.1-13.9	13.3	11.9-14.7
Hamlets																				
5 Davis	13.6	9.7-15.7	13.5	-	15.7	-	14.0	-	13.4	12.8-13.9	15.8	-	n.a.	n.a.	14.6	-	13.4	12.6-13.8	13.6	12.2-14.6
6 Mennon	15.0	13.8-15.6	14.4	13.5-16.0	15.7	13.5-16.8	14.8	14.8-14.9	12.8	11.3-14.8	15.2	11.8-18.4	14.2	12.9-15.0	14.0	-	13.2	-	12.3	11.2-14.3
7 Carlton	14.5	13.9-15.0	14.1	13.9-14.3	15.1	-	14.3	12.5-16.3	12.6	11.1-14.1	14.3	12.4-15.4	15.6	13.1-17.8	13.4	11.8-16.2	12.5	11.8-13.3	13.6	12.4-15.0
Villages																				
8 MacDowall	14.0	-	12.4	-	16.0	-	12.4	11.8-13.5	13.0	12.8-13.2	15.9	-	13.3	12.8-13.9	12.3	11.3-13.0	12.2	-	14.2	14.0-14.3
9 Osler	14.0	13.9-14.0	14.0	12.9-14.9	15.1	14.0-16.1	13.8	12.9-14.3	13.0	10.1-14.7	14.2	12.4-16.0	14.5	12.5-16.8	14.6	13.1-16.1	13.2	11.8-14.0	13.4	11.6-15.2
10 Dalmeny	16.3	15.5-17.4	13.6	12.8-14.3	16.0	15.2-17.0	14.8	13.4-15.9	11.6	10.0-12.5	14.1	12.7-16.8	13.5	11.6-15.9	13.7	12.4-14.7	12.9	11.5-14.0	n.a.	n.a.
11 Laird	14.8	12.8-16.2	13.0	11.9-14.9	14.2	11.8-15.8	14.3	12.7-17.0	14.2	13.7-14.9	15.5	-	14.4	13.6-16.2	13.3	11.2-14.4	12.6	12.4-12.7	13.4	12.4-15.3
12 Warman	n.a.	n.a.	15.2	13.8-16.7	16.5	16.1-16.9	14.3	-	13.6	-	14.3	13.7-14.9	*		*		Closed			
13 Hepburn	14.6	13.7-15.4	14.4	12.2-16.0	16.6	15.4-18.7	15.1	14.7-15.8	12.1	11.0-13.2	14.0	12.1-15.7	15.0	-	13.9	12.0-15.9	13.0	11.8-13.6	13.0	12.0-14.6
Towns																				
14 Hague	14.1	13.7-14.2	13.7	11.6-15.3	15.3	13.4-16.4	13.3	12.1-14.8	12.7	12.4-13.1	13.7	12.6-14.2	13.9	12.9-14.9	14.0	11.1-15.1	13.1	11.8-15.2	13.6	12.9-14.7
15 Langham	15.2	14.4-15.9	15.6	14.9-16.1	16.5	15.2-17.8	14.5	13.2-17.4	13.2	10.4-14.8	15.4	13.3-17.4	14.6	14.1-15.1	14.5	12.6-15.7	13.3	11.3-15.2	13.4	12.5-14.6
16 Duck Lake	14.5	13.7-15.7	13.2	12.1-14.9	14.2	14.0-14.4	13.8	13.2-14.9	12.0	11.6-12.5	14.1	-	13.7	12.5-14.9	13.4	12.8-14.2	13.4	-	14.2	-
17 Waldheim	14.8	12.7-15.8	16.2	16.1-16.4	16.0	14.9-17.4	14.9	13.1-17.6	13.1	11.9-14.1	14.3	10.9-16.2	15.3	14.3-16.6	13.0	11.1-15.7	13.4	13.3-13.5	14.8	14.6-14.9
Greater Towns																				
18 Blaine Lake	14.7	14.0-15.1	14.0	13.3-15.6	15.0	14.2-16.2	13.8	11.8-15.2	13.3	12.6-14.0	13.9	12.5-15.0	15.0	14.2-15.9	13.5	10.3-15.4	12.2	9.8-13.5	13.5	12.3-15.7
19 Rosthern	14.4	13.6-15.1	13.7	12.4-14.8	15.8	15.1-16.8	14.0	12.6-15.3	12.6	11.9-13.7	14.7	13.4-15.6	14.1	13.0-16.1	14.6	13.0-17.0	13.1	11.7-15.0	13.8	11.8-15.9
Cities																				
20 Prince Albert	14.2	11.8-15.4	13.4	12.2-14.6	16.5	16.3-16.6	14.5	13.6-16.6	12.7	11.4-13.9	12.8	11.7-14.0	12.5	10.8-14.2	14.8	13.4-16.5	12.8	12.7-12.8	13.1	10.8-14.4
Total Study Area[a]	14.5	9.7-17.4	13.9	10.9-16.7	15.8	11.8-18.7	14.1	11.7-17.6	12.7	10.0-14.9	14.7	10.9-18.4	14.3	10.8-17.8	14.0	10.3-17.0	13.1	9.8-15.2	13.6	10.8-15.9
Saskatchewan Total	14.2	8.6-18.6	14.6	8.5-19.2	15.3	10.4-19.3	13.7	9.5-18.9	13.3	9.5-17.7	14.1	9.0-19.1	14.2	9.5-19.7	14.0	9.1-19.3	13.4	8.8-16.8	13.7	9.7-19.0

- Indicates data are based on only one sample of wheat. *Storage only. n.a. - Not available.

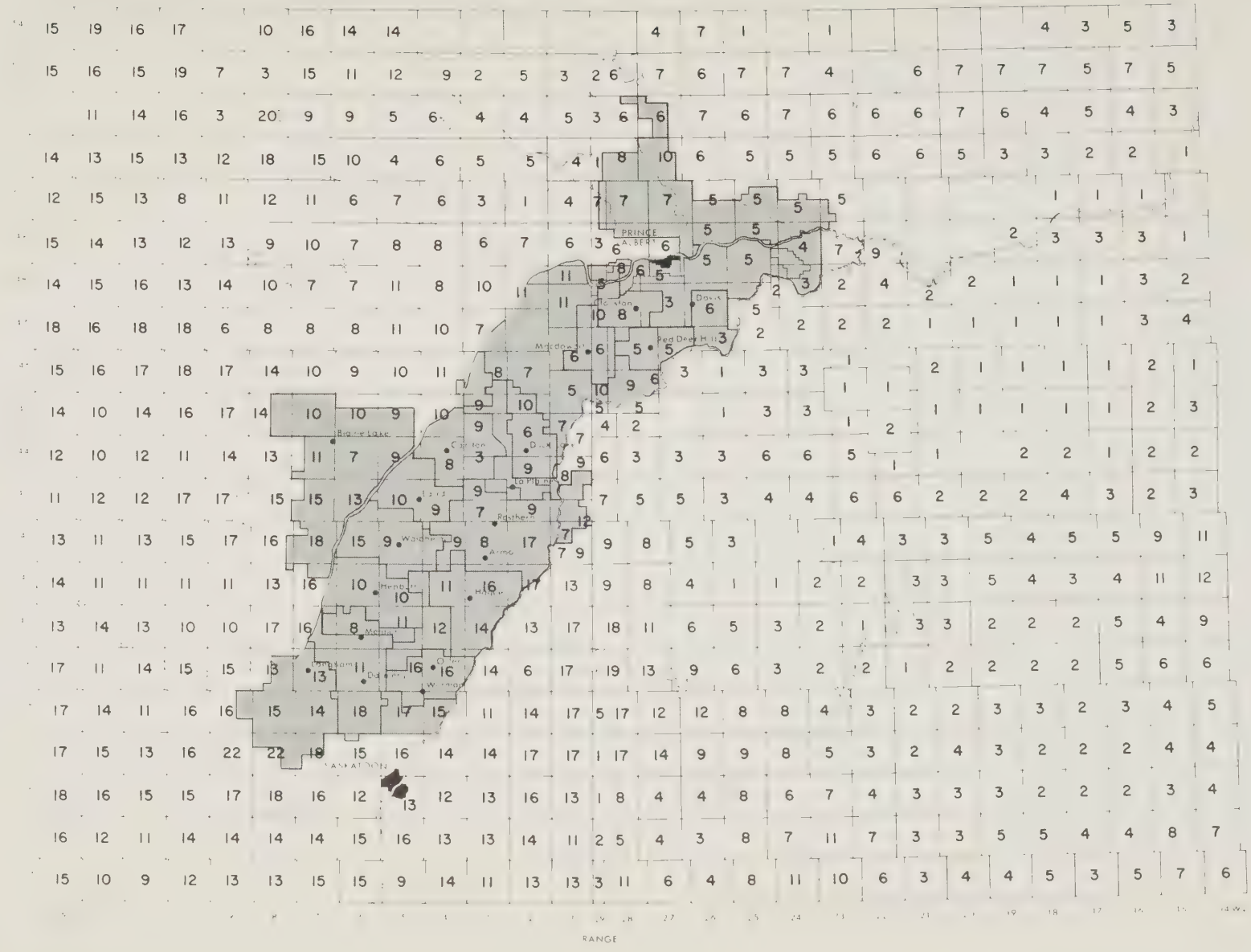
[a]Averages weighted by number of samples.

Source: Grain Research Laboratory, Canadian Grain Commission, Winnipeg.

Prairie Farm Assistance Act Payments

The map in Figure 2.3 shows a rough outline of the land tributary to each delivery point in the study area and the number of times during the past 32 years PFAA payments were made to grain farmers in each township because of crop failure. A value of 12, for example, does not mean that all farmers in that township received payments in 12 years out of 32 but that some farmers did. Thus, the map gives an indication of crop failure frequency in the hinterlands of the study area.

The least number of payments in the study area occurred west of MacDowall where no payments were made in one township. Considerable variation exists throughout the region, even between adjacent townships. The maximum number of times payments were made to producers was 22 times south of Langham.



PRAIRIE FARM ASSISTANCE ACT PAYMENTS 1939-1970

Figure 2.3

Farm Size and Land Tenure

The distribution of grain farm sizes in the Rosthern study area is shown in Table 2.10. Class sizes are arranged in intervals of 159 acres such that 160, or a multiple of it, falls at the midpoint of each class size. More detailed statistics of farm sizes, grouped by delivery point, are given in Table 2.11 for crop years 1962-63 and 1969-70.

The "number of farms" in this context is actually the number of grain delivery permits, and farm sizes are derived from the acreages recorded in each permit book. To the extent that individual farm operational units are, in some instances, associated with more than one delivery permit the number of farms is overstated while farm sizes are understated. With this in mind, the total number of farms declined by 425 from 2,649 to 2,224 or 16 percent. In 1962-63 the greatest number of farms (31.4 percent) fell into the 241-400 acre size group while in 1969-70 the greatest number (25.8 percent) fell into the 1-240 acre size group. The mode, or that size of farm occurring most frequently in the study area, was 320 acres in both years (Footnote Table 2.11). In both years Table 2.10 shows there is a greater concentration of farms at the lower end of the size groups than at the upper end, resulting in a skewed distribution.

The mean farm size (Table 2.11) increased by 16.5 percent from 413 acres to 481 acres. The mean increased at every delivery point except Mennon, where it declined by 24 acres.

The median farm size in the study area increased from 320 acres to 400 acres. This means that in 1962-63 one half the total number of farms had less than 320 acres and one half had more than 320 acres.[1] In 1969-70 this half-way point rose to 400 acres. Considering that the median as well as the mean increased we can conclude that the number of large farms increased relative to the number of small farms.

The general trend with respect to land tenure has been toward a greater percentage of land being owned by farm operators rather than rented (Table 2.12). For the total study area the percentage of land owned increased from 73.8 to 77.8 percent. In 1969-70 the percentage owned values ranged from 68.2 percent at Carlton to 88.8 percent at Red Deer Hill.

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[1]Actually, some farms had exactly 320 acres, therefore, something less than 50 percent of the farms had less or more than 320 acres.

TABLE 2.10 DISTRIBUTION OF GRAIN FARM SIZES IN THE STUDY AREA, CROP YEARS 1962-63 AND 1969-70

Size Group (acres)	1962-63 Number of farms	1962-63 Percent of Total	1969-70 Number of farms	1969-70 Percent of Total
1 - 240	771	29.1	573	25.8
241 - 400	831	31.4	564	25.4
401 - 560	476	18.0	425	19.1
561 - 720	299	11.3	283	12.7
721 - 880	133	5.0	156	7.0
881 - 1,040	69	2.6	86	3.9
1,041 - 1,200	26	1.0	61	2.7
1,201 - 1,360	15	0.6	24	1.1
1,361 - 1,520	9	0.3	18	0.8
1,521 - 1,680	7	0.3	11	0.5
1,681 - 1,840	3	0.1	5	0.2
1,841 - 2,000	4	0.1	3	0.1
2,001 - 2,160	1	0.0	4	0.2
2,161 - 2,320	2	0.1	3	0.1
2,321 - 2,480	0	0.0	1	0.1
2,481 - 2,640	0	0.0	1	0.1
2,641 - 2,800	0	0.0	0	0.0
2,801 and over	3	0.1	6	0.2
Study Area Total	2,649	100.0	2,224	100.0

Source: Delivery Permit Books, Canadian Wheat Board, Winnipeg.

TABLE 2.11 AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1969-70

Delivery Point	No. of Farms	Mean Size	Maximum Size	Minimum Size	Median Size	Modal Size Group(s)
			- acres -			
Too Small to Classify						
1 Arma						
1962-63	25	413	799	154	374	1-240 241-400
1969-70	Closed for storage					
2 La Plaine						
1962-63	40	547	1,490	80	480	401-560
1969-70	18	745	2,243	160	480	401-560
3 Red Deer Hill						
1962-63	66	408	1,439	80	320	241-400
1969-70	58	452	1,439	80	320	241-400
4 Clouston						
1962-63	56	415	1,730	80	320	241-400
1969-70	62	453	1,754	80	320	241-400
Hamlets						
5 Davis						
1962-63	55	447	1,890	129	327	241-400
1969-70	41	610	3,147	153	430	241-400
6 Mennon						
1962-63	76	425	1,280	30	320	1-240
1969-70	42	401	960	30	320	1-240
7 Carlton						
1962-63	113	544	1,910	66	480	241-400
1969-70	99	685	5,831	80	616	241-400
Villages						
8 MacDowall						
1962-63	96	343	1,697	65	320	1-240
1969-70	65	411	1,600	160	320	241-400
9 Osler						
1962-63	113	373	1,867	17	320	241-400
1969-70	74	374	1,093	20	351	1-240
10 Dalmeny						
1962-63	139	424	1,378	60	448	401-560
1969-70	125	472	1,623	50	400	1-240

(continued)

TABLE 2.11 AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1969-70 (continued)

Delivery Point	No. of Farms	Mean Size	Maximum Size	Minimum Size	Median Size	Modal Size Group(s)
			- acres -			
11 Laird						
1962-63	122	422	1,120	3	359	241-400
1969-70	107	467	1,440	4	400	241-400
12 Warman						
1962-63	52	353	1,127	40	311	1-240
1969-70	Closed for storage					
13 Hepburn						
1962-63	149	365	1,098	10	320	1-240
1969-70	106	418	1,760	5	320	1-240
Towns						
14 Hague						
1962-63	229	358	1,436	40	320	1-240
1969-70	155	421	1,280	40	320	241-400
15 Langham						
1962-63	134	478	2,959	38	480	401-560
1969-70	122	519	3,667	80	480	241-400
16 Duck Lake						
1962-63	112	532	4,270	16	480	1-240
1969-70	64	727	3,840	143	640	561-720
17 Waldheim						
1962-63	154	424	1,760	40	358	241-400
1969-70	130	486	1,920	35	474	401-560
Greater Towns						
18 Blaine Lake						
1962-63	273	405	1,600	38	320	241-400
1969-70	270	471	2,560	50	400	1-240
19 Rosthern						
1962-63	230	424	2,148	13	350	241-400
1969-70	237	473	2,160	5	430	241-400
Cities						
20 Prince Albert						
1962-63	415	377	3,200	15	320	241-400
1969-70	449	460	3,200	10	369	1-240

(continued)

TABLE 2.11 AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1969-70 (concluded)

Delivery Point	No. of Farms	Mean Size	Maximum Size	Minimum Size	Median Size	Modal Size Group(s)
			- acres -			
Total Study Area						
1962-63	2,649	413[a]	4,270	3	320	241-400[b]
1969-70	2,224	481[a]	5,831	4	400	1-240[b]

[a]The standard deviation for the total study area in 1962-63 was 286 acres and in 1969-70 it was 371 acres.
[b]The modal size for the total study area in both crop years was 320 acres.

Source: Delivery Permit Books, Canadian Wheat Board, Winnipeg.

TABLE 2.12 LAND TENURE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1969-70

Delivery Point	Percent Owned 1962-63	Percent Owned 1969-70	Percent Rented 1962-63	Percent Rented 1969-70
Too Small to Classify				
1 Arma	56.5	*	43.5	*
2 La Plaine	66.1	78.2	33.9	21.8
3 Red Deer Hill	86.2	88.8	13.8	11.2
4 Clouston	84.9	84.6	15.1	15.4
Hamlets				
5 Davis	75.8	69.9	24.2	30.1
6 Mennon	73.2	74.5	26.8	25.5
7 Carlton	67.4	68.2	32.6	31.8
Villages				
8 MacDowall	81.4	87.8	18.6	12.2
9 Osler	73.0	75.4	27.0	24.6
10 Dalmeny	77.8	82.9	22.2	17.1
11 Laird	71.2	78.0	28.8	22.0
12 Warman	80.2	*	19.8	*
13 Hepburn	79.6	78.4	20.4	21.6
Towns				
14 Hague	71.2	75.9	28.8	24.1
15 Langham	68.5	76.1	31.5	23.9
16 Duck Lake	69.9	82.9	30.1	17.1
17 Waldheim	69.9	73.7	30.1	26.3
Greater Towns				
18 Blaine Lake	76.4	79.7	23.6	20.3
19 Rosthern	70.3	73.3	29.7	26.7
Cities				
20 Prince Albert	77.0	79.6	23.0	20.4
Study Area Total	73.8	77.8	26.2	22.2

* Storage only.

Source: Delivery Permit Books, Canadian Wheat Board, Winnipeg.

PART III

GRAIN MARKETING AND HANDLING CHARACTERISTICS

Producers' Choice of Alternate Delivery Points

When the Canadian Wheat Board changed the delivery regulations in 1970-71, farmers were given the right to nominate a second official delivery point for Board grains; that is, each producer was entitled to haul his grain to two separate places for delivery to the Board. The information gleaned from the individual selections affords an opportunity to speculate on what factors farmers consider when weighing the advantages and disadvantages of a range of possible elevator centers.

Table 3.1 is a partial analysis of the selections made by 2,192 farmers normally delivering to points in the Rosthern study area. Among the factors not considered are such things as an individual's loyalty to a specific grain handling company, best road access and availability of particular shopping or service facilities, like banking for example. The recorded data do not make such an analysis readily possible.

The following observations, however, can be made:

a) Farmers hauling to smaller communities were more inclined to select an alternate point than those delivering to larger communities.

b) Farmers hauling to smaller communities were more inclined to choose as their alternate point the next nearest elevator.

c) A large percentage of farmers chose a Greater Town or City as their alternate except if they were already delivering to a larger center.

d) On the average for the study area about 62 percent of permit holders choosing an alternate delivery point, chose a point in a different loading block but there is no clear pattern with respect to size of community. The number of farmers choosing Saskatoon, a double loading block delivery point, as an alternate was included when deriving the percentage of farmers choosing a different loading block; therefore, in some instances a high percentage figure in the "Different" column merely reflects the high percentage of farmers who chose Saskatoon.

Combinations of factors were no doubt important, too. For instance, of 59 permit holders using Clouston for their basic delivery point, 57 chose Prince Albert for their alternate. This was their next nearest point, but also it is a City, offering a full range of commercial and social services.

The choice was an obvious one, considering the good railway facilities and the half-million bushels of elevator space available in Prince Albert.

Of particular interest is the rather large number of producers (45 percent) who chose Saskatoon, by-passing several other elevator points to reach there. Some farmers who normally use Prince Albert and Rosthern even selected Saskatoon for their alternate point.

During the authors' field survey some added information on alternate point selection was picked up. Loyalty to a railway line is a factor. For instance, some producers at Mennon chose Hepburn in the hope that this would have some effect in their attempts to retain the Canadian National Carlton subdivision in operation.

TABLE 3.1 PRODUCERS' CHOICE OF ALTERNATE DELIVERY POINTS, 1970-71

Delivery Point	No. of Farmers	Percent of Farmers Not Choosing Alternate	No. of Farmers Choosing Alternate	Alternate Chosen		Loading Block Chosen		
				Next Nearest Point	Larger Center[a]	Same	Different	Double[b]
				- percent of farmers choosing alternate -				
Too Small to Classify								
1 Arma	Storage only							
2 La Plaine	16	0.0	16	100.0	75.0	100.0	0.0	0.0
3 Red Deer Hill	57	3.5	55	36.4	63.6	3.6	96.4	0.0
4 Clouston	59	0.0	59	100.0	96.6	100.0	0.0	0.0
Hamlets								
5 Davis	39	0.0	39	94.9	94.9	2.6	97.4	0.0
6 Mennon	44	13.6	38	50.0	50.0	50.0	50.0	50.0
7 Carlton	93	19.4	75	61.3	37.3	96.0	4.0	4.0
Villages								
8 MacDowall	58	25.9	43	72.1	27.9	46.5	53.5	0.0
9 Osler	82	58.5	34	14.7	85.3	14.7	85.3	85.3
10 Dalmeny	124	10.5	111	54.1	87.4	12.6	87.4	86.5
11 Laird	103	16.5	86	29.1	88.4	29.1	70.9	69.8
12 Warman	Closed							
13 Hepburn	103	25.2	77	14.3	85.7	14.3	85.7	85.7
Towns								
14 Hague	160	48.8	82	30.5	85.4	30.5	69.5	67.1
15 Langham	129	42.6	74	14.9	74.3	10.8	89.2	74.3
16 Duck Lake	58	65.5	20	40.0	55.0	90.0	10.0	0.0
17 Waldheim	122	2.4	119	17.7	89.1	17.6	82.4	82.4
Greater Towns								
18 Blaine Lake	252	55.2	113	67.3	27.4	69.9	30.1	27.4
19 Rosthern	240	49.2	122	36.9	52.5	36.1	63.9	52.5
Cities								
20 Prince Albert	453	74.4	116	39.7	1.7[c]	37.1	62.9	1.7
Study Area Total	2,192	41.6	1,279	44.2	63.1	37.7	62.3	45.2

[a]Prince Albert, Saskatoon, Rosthern, Birch Hills.
[b]Saskatoon is in two loading blocks.
[c]Six permit holders chose Birch Hills as their alternate but these were excluded because Birch Hills is smaller than Prince Albert.

Source: Canadian Wheat Board, Winnipeg.

Delivery Permit Books Issued

The number of permit books issued decreased by 472 or 17.8 percent between 1962-63 and 1971-72 as shown in Table 3.2. Nearly all delivery points in the study area experienced a decrease in the number of permits issued. Rosthern and Prince Albert were the only points where the number of permits issued increased. Prince Albert had the largest absolute increase of 42 permits or 10.1 percent while Rosthern increased by 29 permits or 12.6 percent. Hague and Duck Lake showed the largest losses of permit holders, namely, 65 (28.4 percent) and 53 (47.3 percent). When Warman closed in 1968-69 the adjacent points of Osler and Dalmeny experienced increases in the number of permits.

TABLE 3.2 DELIVERY PERMIT BOOKS ISSUED BY DELIVERY POINT, 1962-63 TO 1971-72

Delivery Point	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72[a]
Too Small to Classify										
1 Arma	25	31	30	21	17	11	*	*	*	Closed
2 La Plaine	40	42	40	34	21	23	23	18	16	Closed
3 Red Deer Hill	66	65	61	65	68	66	66	58	57	50
4 Clouston	56	55	59	58	57	56	60	62	59	53
Hamlets										
5 Davis	55	54	51	48	56	54	52	41	39	39
6 Mennon	76	78	80	69	63	65	46	42	44	43
7 Carlton	113	102	100	98	94	94	102	99	93	90
Villages										
8 MacDowall	96	92	93	81	80	71	68	65	58	52
9 Osler	113	109	107	95	90	92	114	74	82	96
10 Dalmeny	139	146	136	137	120	115	128	125	124	126
11 Laird	122	116	116	114	107	107	108	107	103	96
12 Warman	52	43	38	37	37	29	*	*	Closed	
13 Hepburn	149	145	139	135	132	126	119	106	103	103
Towns										
14 Hague	229	207	201	187	183	185	181	155	160	164
15 Langham	134	126	117	126	132	126	120	122	129	132
16 Duck Lake	112	98	94	87	85	77	70	64	58	59
17 Waldheim	154	149	147	143	142	138	139	132	122	113
Greater Towns										
18 Blaine Lake	273	270	263	259	242	243	247	270	252	245
19 Rosthern	230	231	222	216	218	224	226	237	240	259
Cities										
20 Prince Albert	415	415	414	406	381	377	389	449	453	457
Study Area Total	2,649	2,574	2,508	2,416	2,325	2,279	2,257	2,226	2,192	2,177

* Storage only.

[a]Permit declarations processed to Sept. 22, 1971.

Source: Delivery Permit Books, Canadian Wheat Board, Winnipeg.

Canadian Wheat Board Initial Payments

Under the Canadian Wheat Board marketing system producers receive an initial payment upon delivery of their grain to the country elevator. Table 3.3 shows net initial payments based on a set value at the Lakehead, less freight costs from the delivery point and less country elevator handling charges.[1] The level of initial payment is established each year by the Federal Government as an order-in-council and is not necessarily the same from year to year.[2] Initial payments in 1969-70, for example, were substantially lower than in 1968-69. In 1971-72 initial payments were the same or slightly lower than two years earlier in 1969-70.

Freight rate zones have been established, which follow a general north-south orientation and increase by one-cent-per-hundredweight steps as one moves westward from the Lakehead. Figure 3.1 shows freight rate zones in northern Saskatchewan in which the study area is included. An examination of Figure 3.1 shows that all delivery points in the Rosthern study area, except Osler, Warman, Dalmeny and Blaine Lake are in the 23-cent freight rate zone. Osler, Warman and Dalmeny are in the 22-cent zone and Blaine Lake is in the 24-cent zone.

Since net initial payments are slightly higher in a 22-cent freight rate zone than, say in a 23-cent zone, it follows that a farmer located on or near the boundary between these two zones may well take this into account when choosing his delivery point. For example, someone delivering to Osler receives $1.27 per bushel (No. 1 C.W. Red Spring Wheat, 1971-72) which is 3/4 cent more than the $1.26 1/4 per bushel he would receive at neighboring Hague. To the extent that this has a bearing on each farmer's choice of delivery point, to that extent also will the size and shape of delivery point hinterlands be affected.

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[1] In 1971-72, for instance, the handling charge was 5 3/4 cents per bushel of wheat, durum and barley and 4 1/2 cents per bushel of oats. This statuatory charge is comprised of the country elevator 'elevation' charge plus a portion of the terminal elevator handling charge.

[2] For a more detailed description of how the initial payment is arrived at see J.W. Channon, "How Canadian Wheat is Handled," Canadian Journal of Agricultural Economics, Workshop Proceedings, 1969, p. 88.

TABLE 3.3 CANADIAN WHEAT BOARD NET INITIAL PAYMENTS TO PRODUCERS BY FREIGHT RATES, BASIS THUNDER BAY, ONTARIO[a]

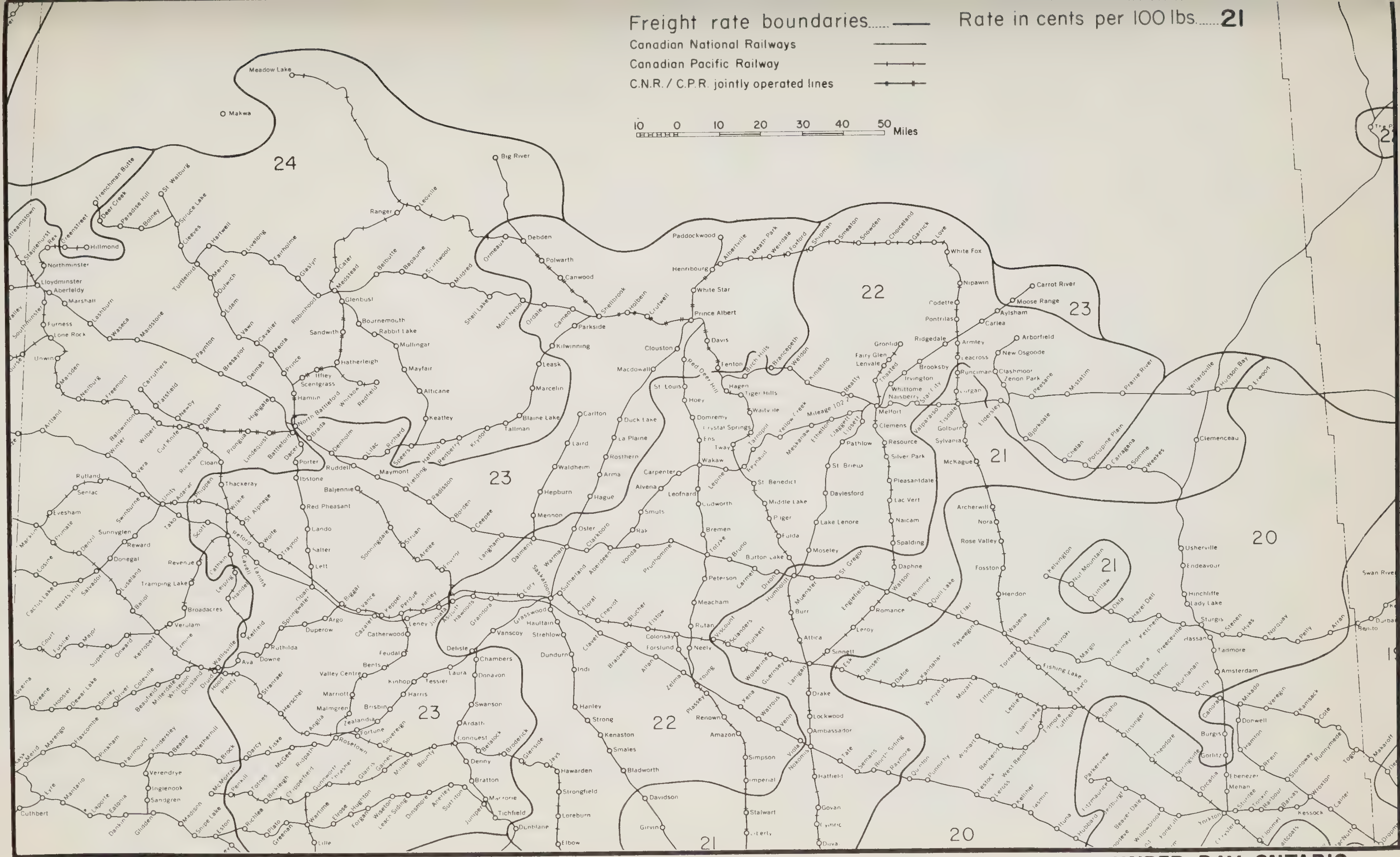
Grain Freight Rates to Lakehead[b]	Wheat			Durum			Oats		Barley	
	No. 1 Northern	No. 2 Northern	No. 4 Northern	No. 1 C.W.A.	No. 2 C.W.A.	No. 4 C.W.A.	No. 2 C.W.	No. 1 Feed	No. 3 C.W. 6 Row	No. 1 Feed
- cents/cwt. -	- dollars per bushel -									
1968-69										
20	1.52 1/2	1.48 1/2	1.37 1/2	1.52 1/2	1.48 1/2	1.37 1/2	.53 7/8	.48 7/8	.90 7/8	.81 7/8
21	1.51 3/4	1.47 3/4	1.36 3/4	1.51 3/4	1.47 3/4	1.36 3/4	.53 1/2	.48 1/2	.90 3/8	.81 3/8
22	1.51 1/4	1.47 1/4	1.36 1/4	1.51 1/4	1.47 1/4	1.36 1/4	.53 1/4	.48 1/4	.89 7/8	.80 7/8
23	1.50 1/2	1.46 1/2	1.35 1/2	1.50 1/2	1.46 1/2	1.35 1/2	.52 7/8	.47 7/8	.89 3/8	.80 3/8
24	1.50	1.46	1.35	1.50	1.46	1.35	.52 1/2	.47 1/2	.88 7/8	.79 7/8
1969-70										
20	1.32 1/4	1.28 1/4	1.15 1/4	1.32 1/4	1.28 1/4	1.15 1/4	.48 5/8	.43 5/8	.75 5/8	.65 5/8
21	1.31 1/2	1.27 1/2	1.14 1/2	1.31 1/2	1.27 1/2	1.14 1/2	.48 1/4	.43 1/4	.75 1/8	.65 1/8
22	1.31	1.27	1.14	1.31	1.27	1.14	.48	.43	.74 5/8	.64 5/8
23	1.30 1/4	1.26 1/4	1.13 1/4	1.30 1/4	1.26 1/4	1.13 1/4	.47 5/8	.42 5/8	.74 1/8	.64 1/8
24	1.29 3/4	1.25 3/4	1.12 3/4	1.29 3/4	1.25 3/4	1.12 3/4	.47 1/4	.42 1/4	.73 5/8	.63 5/8
1971-72	No. 1 C.W. Red Spring[c]									
20	1.28 1/4		1.15 1/4	1.28 1/4	1.24 1/4	1.11 1/4	.48 5/8	.43 5/8	.75 5/8	.65 5/8
21	1.27 1/2		1.14 1/2	1.27 1/2	1.23 1/2	1.10 1/2	.48 1/4	.43 1/4	.75 1/8	.65 1/8
22	1.27		1.14	1.27	1.23	1.10	.48	.43	.74 5/8	.64 5/8
23	1.26 1/4		1.13 1/4	1.26 1/4	1.22 1/4	1.09 1/4	.47 5/8	.42 5/8	.74 1/8	.64 1/8
24	1.25 3/4		1.12 3/4	1.25 3/4	1.21 3/4	1.08 3/4	.47 1/4	.42 1/4	.73 5/8	.63 5/8

[a]Prior to deduction of the Prairie Farm Assistance Act levy of one percent. These prices are also known as "street prices".

[b]Flaxseed and rapeseed 1 1/2 cents per hundredweight higher.

[c]Effective Aug. 1, 1971 the grades No. 1 and No. 2 Manitoba Northern were replaced by the new grade No. 1 Canada Western Red Spring Wheat.

Source: Canadian Wheat Board, Winnipeg.



EXPORT GRAIN FREIGHT RATES PER 100 lbs. FROM NORTHERN SASKATCHEWAN TO THUNDER BAY, ONTARIO

Source: Map "Eastbound Export Grain Rates Per 100 lbs. Based on CNR Armstrong, Fort William, Port Arthur and West Fort William, and CPR to Fort William, Port Arthur and West Fort William" Geographical Branch, Department of Mines and Technical Surveys, Ottawa, 1965.

Figure 3.1

Country Elevator Facilities

The number and storage capacity of grain elevators at any particular delivery point is a measure of the importance of that point as a grain collection and distribution center.[1] Table 3.4 contains this information again for the crop years 1962-63 and 1969-70. The number of grain companies represented at each point in 1962 and 1969 is also shown.

All points had the same number of elevators in 1969-70 as in 1962-63 with the exception of Langham, which had one less elevator. Arma and Warman were closed for storage. Six delivery points increased storage capacity, four decreased and ten remained the same for an overall increase in capacity of 256,000 bushels or an 8.2 percent increase.

Examination of the number of grain companies present at each delivery point reveals the fact that where two or more elevators exist, usually two or more companies are present also. This is an indication of competition among elevator companies. Five delivery points had one less company in 1969 than in 1962. There were eight one-company points in 1969-70.

Table 3.5 shows information on ownership, age and capacity of country elevators in the study area as of August 1, 1970. The Saskatchewan Wheat Pool had elevators at 15 of the 18 open delivery points, while United Grain Growers had elevators at six points; National Grain at five points; Pioneer Grain at four points and Federal Grain at three of the delivery points.

The average age of the 50 elevators recorded in Table 3.5 was 41 years in 1971. Thirty-nine elevators or 78 percent were built in 1940 or earlier, while only three (6 percent) have been built since 1960. Twenty-one elevators constructed in 1940 or earlier have not had annexes added since 1940 and have an average storage capacity of slightly more than 45,000 bushels. Those elevators built after 1940 and those that were built prior to 1940 but have had annexes added since that date, have an average capacity of about 83,000 bushels. The oldest elevator in the study area was built in 1902 in Osler and no annexes have been added to increase its original 22,000-bushel capacity.

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[1] Bushel receipts should also be taken into account. See Table 3.6.

TABLE 3.4 NUMBER AND CAPACITY OF LICENSED COUNTRY ELEVATORS BY DELIVERY POINT, 1962-63 AND 1969-70

Delivery Point	Number of Elevators		Storage Capacity		Number of Grain Companies	
	1962-63	1969-70	1962-63	1969-70	Aug. 1, 1962	Aug. 1, 1969
	- number -		- '000 bushels -		- number -	
Too Small to Classify						
1 Arma	1	1[a]	30	30	1	1
2 La Plaine	2	2	70	67	1	1
3 Red Deer Hill	1	1	48	48	1	1
4 Clouston	1	1	48	48	1	1
Hamlets						
5 Davis	1	1	33	61	1	1
6 Mennon	3	3	101	101	2	2
7 Carlton	4	4	232	232	4	3
Villages						
8 MacDowall	1	1	33	33	1	1
9 Osler	3	3	104	107	2	2
10 Dalmeny	3	3	154	222	3	2
11 Laird	4	4	229	229	4	3
12 Warman	1	1[a]	30	30	1	1
13 Hepburn	3	3	204	218	3	3
Towns						
14 Hague	5	5	250	250	4	3
15 Langham	3	2	177	175	2	2
16 Duck Lake	1	1	72	70	1	1
17 Waldheim	4	4	196	196	3	3
Greater Towns						
18 Blaine Lake	6	6	481	459	4	4
19 Rosthern	5	5	277	399	4	3
Cities						
20 Prince Albert	4	4	357	407	3	3
Study Area Total	56	55	3,126	3,382	6[b]	5[b]

[a]Elevator used for storage only.

[b]Grain companies represented are:

Federal Grain Ltd. (Not present in 1962-63)
National Grain Co. Ltd.
Pioneer Grain Co. Ltd.
Saskatchewan Wheat Pool
United Grain Growers Ltd.
McCabe Grain Co. Ltd. (Not present in 1969-70)
Searle Grain Co. Ltd. (Not present in 1969-70)

Source: Canadian Grain Commission, Winnipeg.

TABLE 3.5 COUNTRY ELEVATORS: OWNER, AGE AND CAPACITY BY DELIVERY POINT, 1970-71

Delivery Point	Elevator Company Aug. 1, 1971	Year of Construction Elevator	Year of Construction Annex	Storage Capacity Aug. 1, 1971
				- '000 bus. -
Too Small to Classify				
1 Arma	Closed			
2 La Plaine	Sask. Wheat Pool "A"	1924	1939	39[a]
	Sask. Wheat Pool "B"	1919		28[a]
3 Red Deer Hill	Sask. Wheat Pool	1958		48
4 Clouston	Federal Grain	1928	1950	48
Hamlets				
5 Davis	Sask. Wheat Pool	1951	1967 (2)[b]	61
6 Mennon	Sask. Wheat Pool	1928	1940	51
7 Carlton	Pioneer Grain	1921	1940 & 1951	68
	Sask. Wheat Pool	1915	1925	45
	United Grain Growers #1	1928	1932	47
	United Grain Growers #2	1915	1932 & 1951	72
Villages				
8 MacDowall	Sask. Wheat Pool	1953		33
9 Osler	Pioneer Grain #1	1914	1925	45
	Pioneer Grain #2	1902		22
	Pioneer Grain #3	1929		40
10 Dalmeny	National Grain "A"	1967	1911, 1930 & 1951	115
	National Grain "B"	1917	1951	57
	National Grain "C"	1928	1965 (2)[b]	50
11 Laird	National Grain	1929	1917	42
	Sask. Wheat Pool	1928	1952	70
	United Grain Growers #1	1928	1932 & 1952	77
	United Grain Growers #2	1908	1921	40
12 Warman	Closed			
13 Hepburn	National Grain "A"	1923	1907 & 1926	57
	National Grain "B"	1923	1940 & 1953	82
	Sask. Wheat Pool	1928	1953 & 1968	79
Towns				
14 Hague	Pioneer Grain	1903	1940 & 1952	60
	Sask. Wheat Pool	1928	1940 & 1949	77
	United Grain Growers #1	1917	1932	38
	United Grain Growers #2	1925		27
	United Grain Growers #3	No Record		48
15 Langham	National Grain	1928	1928 & 1932	83
	Sask. Wheat Pool	1936	1940 & 1959	92
16 Duck Lake	Sask. Wheat Pool	1958		70
17 Waldheim	Sask. Wheat Pool	1951	1940	60
	United Grain Growers #1	1909	1932 & 1940	71
	United Grain Growers #2	1928		32
	United Grain Growers #3	1917		33
Greater Towns				
18 Blaine Lake	Federal Grain #1	1956	1914 & 1939	87
	Federal Grain #2	1934	1940	67
	Federal Grain #3	1923	1940	46
	National Grain "A"	1911	1956	69
	National Grain "B"	1922	1917 & 1923	63
	Sask. Wheat Pool	1933	1951 & 1954	127

See footnotes at end of table (continued)

TABLE 3.5 COUNTRY ELEVATORS: OWNER, AGE AND CAPACITY BY DELIVERY POINT, 1970-71 (concluded)

Delivery Point	Elevator Company Aug. 1, 1971	Year of Construction		Storage Capacity Aug. 1, 1971
		Elevator	Annex	
				- '000 bus. -
19 Rosthern	Pioneer Grain	1926	1955 & 1960	92
	Sask. Wheat Pool "A"	1929	1940 & 1954	85
	Sask. Wheat Pool "B"	1924		33
	Sask. Wheat Pool "C"	1971		-
	United Grain Growers #1	1925	1966	109
	United Grain Growers #2	No Record	1958, 1963 & 1966	80
Cities				
20 Prince Albert	Federal Grain	1960		100
	Sask. Wheat Pool "A"	1947	1951 & 1954	140
	Sask. Wheat Pool "B"	1931	1962	95
	United Grain Growers	1969	1971	212

[a]Closed July 31, 1971.
[b]Two annexes constructed in the same year.

Source: Canadian Grain Commission, Winnipeg.

Receipts of Grain at Country Elevators

Annual receipts of grain at a particular delivery point is another measure of its relative importance as a grain collection and distribution center. Receipts for crop years 1962-63 to 1970-71, are presented in Table 3.6 for each delivery point in the study area.

Of all points still open in 1970-71, ten-year average receipts range from 104 thousand bushels at MacDowall to 915 thousand bushels at Prince Albert. The observation that receipts increase as size of community increases can be illustrated by listing the average of the ten-year averages for each community class size as follows (those still open): Too Small to Classify 140; Hamlets 255; Villages 304; Towns 366; and Greater Towns 672 thousand bushels.

Receipts vary considerably from year to year reflecting such things as crop yields and grain marketings. Total study area receipts ranged from just over five million bushels in 1964-65 to a high of just under nine million bushels in 1966-67.

TABLE 3.6 RECEIPTS OF GRAIN AT LICENSED COUNTRY ELEVATORS BY DELIVERY POINT, 1962-63 TO 1970-71 AND TEN-YEAR AVERAGE

Delivery Point	1962-63[a]	1963-64[a]	1964-65[a]	1965-66[a]	1966-67[a]	1967-68[a]	1968-69[a]	1969-70	1970-71	Ten-Year Average 1960-61 to 1969-70
					- '000 bushels -					
Too Small to Classify										
1 Arma	92	108	70	72	61	30	*	*	*	70[b]
2 La Plaine	151	154	124	132	125	88	81	55	62	110
3 Red Deer Hill	134	157	100	181	227	162	149	140	132	157
4 Clouston	106	145	119	188	187	151	157	197	164	152
Hamlets										
5 Davis	117	151	73	186	255	181	141	163	171	149
6 Mennon	225	344	238	275	308	183	139	108	190	222
7 Carlton	367	473	295	388	551	359	329	399	454	396
Villages										
8 MacDowall	109	109	73	102	128	101	100	99	96	104
9 Osler	200	301	142	217	286	171	195	151	265	197
10 Dalmeny	264	562	340	607	584	342	383	312	609	390
11 Laird	410	519	374	532	565	333	319	348	485	423
12 Warman	79	104	34	67	89	30	*	*	-	57[b]
13 Hepburn	427	524	355	505	587	376	338	298	515	405
Towns										
14 Hague	585	655	375	518	657	398	371	329	519	466
15 Langham	201	462	263	401	499	332	316	343	457	326
16 Duck Lake	196	212	100	189	228	188	178	214	195	183
17 Waldheim	492	569	393	658	686	485	404	406	520	489
Greater Towns										
18 Blaine Lake	782	917	609	901	1,028	733	658	763	1,037	779
19 Rosthern	553	598	446	605	740	569	548	575	928	565
Cities										
20 Prince Albert	745	986	491	1,003	1,124	902	1,004	1,306	1,489	915
Study Area Total	6,235	8,050	5,014	7,727	8,915	6,114	5,810	6,206	8,288	6,555

* Storage only.

[a]Rapeseed receipts not included.
[b]Average is for those years a delivery point had receipts.

Source: Canadian Grain Commission, Winnipeg.

Through-Put Ratios

The through-put ratio is the total number of bushels received by a delivery point in one year divided by its total bushel storage capacity (Table 3.7).[1] This ratio represents one measure of efficiency of the grain elevator. The ten-year average is based on average annual receipts over the past ten years divided by the 1969-70 rated storage capacity. Based on ten-year average receipts, 11 points had through-put ratios of under 2.0, while only three points, Red Deer Hill, Clouston and MacDowall had ratios over 3.0. Rosthern had the lowest ten-year average, 1.42 while Red Deer Hill had the highest ratio of 3.28. Contrary to what one might expect, through-put ratios at larger centers were not generally higher than at smaller centers. Through-put ratios in 1962-63 in the study area were slightly higher than the ten-year average, and in 1969-70 slightly lower than the ten-year average, due largely to delivery fluctations between the two years.

It has been suggested that for an elevator to pay for itself, it must maintain a ratio of between 3.0 and 4.0.[2] Speculative reasoning might suggest the following example. Suppose that a one-elevator delivery point has a storage capacity of 50,000 bushels. A through-put ratio of 1.9 (the study area's ten-year average) would require the handling of close to 100,000 bushels per year. At 2,000 bushels per boxcar the elevator agent would only have to load 50 cars per year or one car per week for 50 weeks. A through-put ratio of 5.0 would require 250,000 bushels in receipts and the agent would be required to load 2.5 cars per week each year, which does not seem unreasonable.

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[1] A further comparison of through-put ratios is presented in Part IV, Table 4.5.

[2] D. Zasada, "The Probable Effects of the Application for Railway Branch Line Abandonment on the Grain Elevator Industry", Canadian Farm Economics, April, 1968, page 21.

TABLE 3.7 THROUGH-PUT RATIOS BY DELIVERY POINT 1962-63, 1969-70 AND PREVIOUS TEN-YEAR AVERAGE

Delivery Point	1962-63	1969-70	Ten-Year Average 1960-61 to 1969-70
Too Small to Classify			
1 Arma	3.08	*	2.32
2 La Plaine	2.15	0.82	1.64
3 Red Deer Hill	2.79	2.91	3.28
4 Clouston	2.21	4.11	3.16
Hamlets			
5 Davis	3.55	2.67	2.44
6 Mennon	2.23	1.07	2.20
7 Carlton	1.58	1.72	1.71
Villages			
8 MacDowall	3.29	3.01	3.15
9 Osler	1.93	1.41	1.84
10 Dalmeny	1.71	1.41	1.76
11 Laird	1.79	1.52	1.85
12 Warman	2.64	*	1.90
13 Hepburn	2.09	1.37	1.86
Towns			
14 Hague	2.34	1.32	1.86
15 Langham	1.14	1.96	1.86
16 Duck Lake	2.72	3.04	2.60
17 Waldheim	2.51	2.07	2.49
Greater Towns			
18 Blaine Lake	1.63	1.66	1.70
19 Rosthern	2.00	1.44	1.42
Cities			
20 Prince Albert	2.09	3.21	2.25
Study Area Total	2.00	1.87	1.94

* Storage only

Source: Canadian Grain Commission, Winnipeg.

Acres for Delivery Quota Purposes

Prior to the beginning of the 1970-71 crop year the basis for determining each producer's general grain delivery quota was the so-called "specified acreage". This referred to farm land devoted to cereal crops, summer fallow and cultivated forage crops. Excluded were oilseeds, other miscellaneous crops, native pasture and unimproved farm land. Oilseeds had their own quotas based on declared seeded acreage.

The number of specified acres tributary to a delivery point is an indicator of the amount of grain producing land available and an indicator of the demand for grain handling and storage facilities at that point. Table 3.8 shows the specified acreage for each delivery point for the period 1962-63 to 1969-70. In 1969-70, 849,541 acres out of a total 1,067,661 acres (79.6 percent), made up the specified portion. Therefore, a one bushel quota in the study area would bring forth about 850,000 bushels of grain.

Total specified acreage changed very little over the eight-year period -- an increase of 0.9 percent. While ten out of the 20 delivery points experienced decreases and the other ten increases, communities Too Small to Classify, Hamlets, Villages and Towns all decreased on the average and only Greater Towns (and Prince Albert) increased. Outside of Arma and Warman, the largest percentage decrease occurred at La Plaine (46.7 percent) and the largest percentage increase occurred at Prince Albert (40.3 percent).

Following the Operation LIFT program of 1970-71, further changes in the delivery quota system were introduced for the 1971-72 crop year. Under the new system each producer was required to calculate his total number of "assignable" acres by adding together his 1971 acreages devoted to (1) the six quota grains[1]; (2) summer fallow; (3) other miscellaneous crops (excluding perennial forage) and (4) perennial forage but not exceeding one third of the total of items (1) to (3). Subject to certain regulations, total assignable acres could be assigned or distributed for quota purposes to any one of the quota grains, regardless of whether a producer had any land seeded to a particular crop that year (1971). Hence, there are about 16 different delivery quotas, each with a separate assigned acreage base and each is advanced quite independently by the Wheat Board.

Table 3.9 shows 1971-72 seeded and assigned quota acreages by delivery point in the Rosthern region. In the total study area, quota acres assigned to durum and other wheat amounted to more than three times the acreage seeded to all wheat. The ratio of seeded acres to total quota acres for oats was 1:0.5, barley about 1:1, rye 1:1.3, flax 1:1.4 and rape 1:1.2. Examples where producers assigned a portion of their quota acres to a crop they had not seeded in 1971 are Mennon and Carlton where no durum was planted but quota acres were assigned.

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[1]These are wheat (including durum), barley, oats, rye, flaxseed and rapeseed.

TABLE 3.8 CANADIAN WHEAT BOARD SPECIFIED ACREAGE FOR DELIVERY QUOTA PURPOSES BY DELIVERY POINT, 1962-63 TO 1969-70

Delivery Point	1962-63[a]	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	Percent of Change 1962-63 to 1969-70
					- acres -				
Too Small to Classify									
1 Arma	7,999	9,882	9,350	7,314	5,821	4,381	*	*	-
2 La Plaine	16,210	18,279	18,177	15,831	12,731	12,683	12,952	8,648	-46.7
3 Red Deer Hill	19,517	19,827	19,883	20,251	22,119	22,017	22,680	21,024	+7.7
4 Clouston	16,620	16,866	18,016	17,014	17,474	18,334	20,669	20,333	+22.3
Hamlets									
5 Davis	17,569	17,928	18,343	18,804	27,666	26,452	29,065	20,480	+16.6
6 Mennon	27,958	28,894	30,157	24,808	24,233	23,884	18,027	15,110	-46.0
7 Carlton	44,307	43,055	44,684	43,096	45,528	43,404	45,061	48,446	+9.3
Villages									
8 MacDowall	18,915	18,596	19,092	17,684	18,446	16,609	18,374	17,860	-5.6
9 Osler	31,823	32,616	32,140	30,357	29,278	31,942	37,184	22,293	-29.9
10 Dalmeny	47,919	52,110	51,880	57,560	50,541	47,749	51,763	50,673	+5.7
11 Laird	44,978	46,156	47,453	46,459	44,826	45,126	44,531	41,034	-8.8
12 Warman	13,648	13,260	10,834	10,294	10,067	9,093	*	*	-
13 Hepburn	47,161	46,665	46,721	47,139	47,018	47,925	45,428	39,572	-16.1
Towns									
14 Hague	67,644	63,790	63,880	62,455	65,732	62,780	64,004	55,004	-18.7
15 Langham	51,081	48,780	45,517	48,144	52,926	52,733	50,756	51,722	+1.3
16 Duck Lake	36,772	33,516	33,032	33,770	34,630	33,378	33,660	32,307	-12.1
17 Waldheim	55,374	56,236	58,862	58,695	56,817	58,384	58,606	56,599	+2.2
Greater Towns									
18 Blaine Lake	90,478	90,683	92,319	94,327	93,529	94,281	96,522	101,680	+12.4
19 Rosthern	72,214	73,948	74,419	73,618	79,288	79,947	81,708	87,238	+20.8
Cities									
20 Prince Albert	113,692	118,573	122,062	121,513	119,909	123,633	130,488	159,518	+40.3
Study Area Total	841,879	849,660	856,821	849,133	858,579	854,735	861,478	849,541	+0.9

* Storage only

[a]Durum excluded from specified acreage in 1962-63.

Source: Canadian Wheat Board, Winnipeg.

TABLE 3.9 SEEDED AND QUOTA ACRES BY DELIVERY POINT, 1971-72

	Too Small to Classify				*Hamlets*					
	3 Red Deer Hill		4 Clouston		5 Davis		6 Mennon		7 Carlton	
	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres
Hercules Durum	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	-	-	-	-
Other Durum	-	-	-	-	-	-	-	100	-	40
% of Total	-	-	-	-	-	-	-	0.6	-	0.1
All Other Wheat	2,309	10,999	1,768	4,494	2,825	11,075	3,936	11,346	9,765	26,834
% of Total	11.0	55.7	9.0	23.4	13.8	54.6	25.5	74.1	19.7	54.4
Oats	1,882	850	1,325	761	1,063	278	2,624	588	2,703	861
% of Total	9.0	4.3	6.7	3.9	5.2	1.4	17.0	3.8	5.4	1.7
Selected Oats	-	-	-	-	-	50	-	870	-	103
% of Total	-	-	-	-	-	0.2	-	5.7	-	0.2
Barley	3,242	3,967	4,897	7,951	3,939	4,524	1,943	934	6,769	5,760
% of Total	15.4	20.1	24.9	41.4	19.2	22.3	12.6	6.1	13.6	11.7
Selected Barley	-	250	-	-	-	450	-	650	-	1,050
% of Total	-	1.3	-	-	-	2.2	-	4.2	-	2.1
Rye	-	30	590	630	410	250	-	-	956	1,045
% of Total	-	0.1	3.0	3.3	2.0	1.2	-	-	1.9	2.1
Other Rye	-	-	-	-	-	-	-	-	-	50
% of Total	-	-	-	-	-	-	-	-	-	0.1
Flaxseed	-	-	-	10	92	20	60	135	35	23
% of Total	-	-	-	0.1	0.5	0.1	0.4	0.9	0.1	0.1
Flaxseed for Crushing	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	-	-	-	-
Low Erucic Acid Rape	245	225	-	-	-	-	425	425	212	212
% of Total	1.2	1.1	-	-	-	-	2.7	2.8	0.4	0.4
Other Rapeseed	3,312	3,430	3,313	5,350	2,722	3,645	364	270	10,650	13,384
% of Total	15.8	17.4	16.9	27.9	13.3	18.0	2.4	1.8	21.4	27.1
Misc. Crops	-	-	-	-	-	-	-	-	213	-
% of Total	-	-	-	-	-	-	-	-	0.4	-
Summer Fallow	6,492	-	6,281	-	7,134	-	5,332	-	13,784	-
% of Total	30.9	-	31.9	-	34.8	-	34.6	-	27.8	-
Subtotal	17,482	19,751	18,174	19,196	18,185	20,292	14,684	15,318	45,087	49,362
% of Total	83.2	100.0	92.4	100.0	88.8	100.0	95.2	100.0	90.7	100.0
Perennial Forage	3,531	-	1,499	-	2,298	-	744	-	4,600	-
% of Total	16.8	-	7.6	-	11.2	-	4.8	-	9.3	-
TOTAL ACRES[a]	21,013	19,751	19,673	19,196	20,483	20,292	15,428	15,318	49,687	49,362
% of Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

See footnotes at end of table

(continued)

TABLE 3.9 SEEDED AND QUOTA ACRES BY DELIVERY POINT, 1971-72 (continued)

	Villages									
	8 MacDowall		9 Osler		10 Dalmeny		11 Laird		13 Hepburn	
	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres
Hercules Durum	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	-	-	-	-
Other Durum	-	-	-	-	-	45	-	70	-	30
% of Total	-	-	-	-	-	0.1	-	0.2	-	0.1
All Other Wheat	2,159	8,262	5,503	21,743	10,300	33,171	7,180	22,979	10,212	29,490
% of Total	12.2	50.7	15.7	63.9	20.1	65.2	16.2	51.8	25.2	72.8
Oats	1,879	817	10,305	5,083	10,765	3,860	3,935	898	6,300	1,394
% of Total	10.6	5.0	29.4	14.9	21.0	7.6	8.9	2.0	15.6	3.4
Selected Oats	-	-	-	1,480	-	4,378	-	397	-	1,285
% of Total	-	-	-	4.4	-	8.6	-	0.9	-	3.2
Barley	3,444	5,333	3,972	4,015	7,215	4,632	7,025	5,749	7,750	4,568
% of Total	19.4	32.7	11.3	11.8	14.1	9.1	15.8	13.0	19.1	11.3
Selected Barley	-	-	-	850	-	2,000	-	350	-	1,850
% of Total	-	-	-	2.5	-	3.9	-	0.8	-	4.6
Rye	-	-	170	268	182	210	-	-	260	110
% of Total	-	-	0.5	0.8	0.4	0.4	-	-	0.6	0.3
Other Rye	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	-	-	-	-
Flaxseed	-	-	-	-	123	152	-	50	-	25
% of Total	-	-	-	-	0.2	0.3	-	0.1	-	0.1
Flaxseed for Crushing	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	-	-	-	-
Low Erucic Acid Rape	-	-	50	50	200	160	1,689	1,689	100	100
% of Total	-	-	0.1	0.1	0.4	0.3	3.8	3.8	0.3	0.2
Other Rapeseed	1,378	1,893	412	548	2,569	2,312	9,175	12,170	1,672	1,608
% of Total	7.8	11.6	1.2	1.6	5.0	4.5	20.7	27.4	4.1	4.0
Misc. Crops	20	-	-	-	20	-	76	-	50	-
% of Total	0.1	-	-	-	0.0	-	0.2	-	0.1	-
Summer Fallow	4,790	-	9,636	-	16,855	-	13,635	-	12,945	-
% of Total	27.0	-	27.4	-	32.9	-	30.7	-	31.9	-
Subtotal	13,670	16,305	30,048	34,037	48,229	50,920	42,715	44,352	39,289	40,460
% of Total	77.1	100.0	85.6	100.0	94.1	100.0	96.3	100.0	96.9	100.0
Perennial Forage	4,068	-	5,036	-	2,997	-	1,639	-	1,243	-
% of Total	22.9	-	14.4	-	5.9	-	3.7	-	3.1	-
TOTAL ACRES[a]	17,738	16,305	35,084	34,037	51,226	50,920	44,354	44,352	40,532	40,460
% of Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

See footnotes at end of table

(continued)

TABLE 3.9 SEEDED AND QUOTA ACRES BY DELIVERY POINT, 1971-72 (continued)

	Towns								*Greater Towns*	
	14 Hague		15 Langham		16 Duck Lake		17 Waldheim		18 Blaine Lake	
	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres
Hercules Durum	-	-	111	111	-	-	-	-	50	50
% of Total	-	-	0.2	0.2	-	-	-	-	0.0	0.0
Other Durum	-	119	211	615	-	-	35	231	181	476
% of Total	-	0.2	0.4	1.1	-	-	0.1	0.4	0.2	0.5
All Other Wheat	12,696	45,639	15,995	43,667	4,302	17,913	11,161	34,644	27,444	70,587
% of Total	20.0	72.8	27.8	76.8	13.0	61.1	21.2	65.8	25.7	66.7
Oats	11,902	4,667	7,426	1,323	3,581	1,399	6,471	1,608	4,931	1,165
% of Total	18.7	7.4	12.9	2.3	10.8	4.8	12.3	3.1	4.6	1.1
Selected Oats	-	1,110	-	1,315	-	50	-	1,820	-	50
% of Total	-	1.8	-	2.3	-	0.2	-	3.5	-	0.0
Barley	7,406	5,370	7,268	5,356	4,652	5,648	11,002	7,470	14,999	11,502
% of Total	11.7	8.6	12.6	9.4	14.0	19.2	20.9	14.2	14.0	10.9
Selected Barley	-	1,350	-	1,600	-	-	-	850	-	1,900
% of Total	-	2.2	-	2.8	-	-	-	1.6	-	1.8
Rye	1,392	2,228	1,347	1,786	384	520	72	147	1,296	1,447
% of Total	2.2	3.5	2.4	3.2	1.2	1.8	0.1	0.3	1.2	1.4
Other Rye	-	-	-	-	-	-	-	-	-	-
% of Total	-	-	-	-	-	-	-	-	-	-
Flaxseed	72	90	52	101	-	-	-	80	1,057	1,283
% of Total	0.1	0.1	0.1	0.2	-	-	-	0.1	1.0	1.2
Flaxseed for Crushing	-	60	-	-	-	-	-	-	-	-
% of Total	-	0.1	-	-	-	-	-	-	-	-
Low Erucic Acid Rape	424	439	300	300	50	50	422	412	2,473	2,238
% of Total	0.7	0.7	0.5	0.5	0.1	0.2	0.8	0.8	2.3	2.1
Other Rapeseed	1,605	1,655	634	654	2,606	3,739	5,057	5,355	16,216	15,094
% of Total	2.5	2.6	1.1	1.2	7.9	12.7	9.6	10.2	15.2	14.3
Misc. Crops	65	-	55	-	-	-	157	-	21	-
% of Total	0.1	-	0.1	-	-	-	0.3	-	0.0	-
Summer Fallow	22,156	-	20,131	-	8,073	-	16,514	-	31,734	-
% of Total	34.8	-	35.0	-	24.3	-	31.3	-	29.7	-
Subtotal	57,718	62,727	53,530	56,828	23,648	29,319	50,891	52,617	100,402	105,792
% of Total	90.8	100.0	93.1	100.0	71.3	100.0	96.6	100.0	93.9	100.0
Perennial Forage	5,864	-	3,987	-	9,522	-	1,791	-	6,568	-
% of Total	9.2	-	6.9	-	28.7	-	3.4	-	6.1	-
TOTAL ACRES[a]	63,582	62,727	57,517	56,828	33,170	29,319	52,682	52,617	106,970	105,792
% of Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

See footnotes at end of table

(continued)

TABLE 3.9 SEEDED AND QUOTA ACRES BY DELIVERY POINT, 1971-72 (concluded)

	Greater Towns 19 Rosthern		*Cities* 20 Prince Albert		Study Area Total		Sask. Total	
	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres	Seeded & Summer Fallow Acreage	Quota Acres
Hercules Durum	-	-	160	1,000	321	1,161	622,939	590,476
% of Total	-	-	0.1	0.6	0.0	0.1	1.3	1.3
Other Durum	-	180	-	-	427	1,906	1,286,793	3,067,045
% of Total	-	0.2	-	-	0.1	0.2	2.8	6.6
All Other Wheat	21,272	67,647	27,253	88,221	176,080	548,711	11,722,928	30,679,714
% of Total	20.1	66.5	15.1	49.9	19.2	61.3	25.0	66.3
Oats	10,549	3,051	11,946	5,288	99,587	33,891	2,256,816	721,011
% of Total	9.9	3.0	6.6	3.0	10.9	3.8	4.8	1.6
Selected Oats	-	655	-	60	-	13,623	-	199,139
% of Total	-	0.6	-	0.0	-	1.5	-	0.4
Barley	13,336	11,807	32,689	36,713	141,548	131,299	5,911,806	4,516,871
% of Total	12.6	11.6	18.1	20.8	15.5	14.7	12.6	9.7
Selected Barley	-	1,250	-	1,500	-	15,900	-	1,687,420
% of Total	-	1.2	-	0.8	-	1.8	-	3.6
Rye	1,219	1,509	2,218	3,624	10,496	13,804	553,540	518,274
% of Total	1.2	1.5	1.2	2.1	1.2	1.5	1.2	1.1
Other Rye	-	-	-	-	-	50	-	41,442
% of Total	-	-	-	-	-	0.0	-	0.1
Flaxseed	150	280	138	211	1,779	2,460	943,274	999,292
% of Total	0.1	0.3	0.1	0.1	0.2	0.3	2.0	2.2
Flaxseed for Crushing	-	-	-	-	-	60	-	29,883
% of Total	-	-	-	-	-	0.0	-	0.1
Low Erucic Acid Rape	601	510	531	500	7,722	7,310	342,957	314,930
% of Total	0.6	0.5	0.3	0.3	0.8	0.8	0.7	0.7
Other Rapeseed	13,176	14,836	28,746	39,598	103,607	125,541	2,491,714	2,936,822
% of Total	12.4	14.6	15.9	22.4	11.3	14.0	5.3	6.3
Misc. Crops	95	-	460	-	1,232	-	329,088	-
% of Total	0.1	-	0.2	-	0.1	-	0.7	-
Summer Fallow	31,115	-	57,553	-	284,160	-	17,363,690	-
% of Total	29.3	-	31.9	-	31.0	-	37.0	-
Subtotal	91,513	101,725	161,694	176,715	826,959	895,716	43,825,545	46,302,319
% of Total	86.3	100.0	89.5	100.0	90.3	100.0	93.4	100.0
Perennial Forage	14,508	-	18,915	-	88,810	-	3,078,976	-
% of Total	13.7	-	10.5	-	9.7	-	6.6	-
TOTAL ACRES[a]	106,021	101,725	180,609	176,715	915,769	895,716	46,904,521	46,302,319
% of Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Total seeded and summer fallow acreage is total improved acreage.

Source: Canadian Wheat Board, Winnipeg.

Acres Devoted to Canadian Wheat Board Grains

There is an accepted division of crops that separates wheat, durum, oats and barley (i.e., the Board grains) from the other cereals and oilseeds. In order to demonstrate how much farmers in each hinterland rely on the Wheat Board for marketing their production Tables 3.10A and 3.10B are included to show a time series of seeded acres (and later quota acres) devoted to Board grains, and the percent these acres are of the total specified or quota acres.

In general, the percentage devoted to Board grains in the years 1962-63 to 1969-70 was fairly uniform ranging from a low, study area total of 53.9 percent in 1969-70 to a high of 61.2 percent in 1966-67 (Table 3.10A). As indicated earlier 1970-71 was an abnormal year and the percentage of acres devoted to Board grains was substantially lower -- down to 35.6 percent for the total study area -- reflecting the reduced number of acres in crop that year.

Most of the percentages in 1971-72 are in the 80 and 90 percent range showing that farmers rely heavily on the Canadian Wheat Board to market their grain. These latest figures are much higher than any previous year; however, it will be appreciated that the data in Table 3.10B are not strictly comparable to the data in Table 3.10A.

TABLE 3.10A NUMBER AND PERCENT OF SPECIFIED ACRES DEVOTED TO CANADIAN WHEAT BOARD GRAINS,[a] 1962-63 TO 1969-70

Delivery Point	1962-63[b]		1963-64		1964-65		1965-66		1966-67		1967-68		1968-69		1969-70	
	acres	%	acres	%	acres	%	acres	%	acres	%	acres	%	acres	%	acres	%
Too Small to Classify																
1 Arma	4,879	61.0	6,009	60.8	5,457	58.4	4,622	63.2	3,787	65.1	2,592	59.2	-	-	-	-
2 La Plaine	8,771	54.1	10,161	55.6	10,263	56.5	8,613	54.0	7,065	55.5	6,818	53.8	7,106	54.9	4,566	52.8
3 Red Deer Hill	11,193	57.4	11,087	55.9	11,394	57.3	11,805	58.3	13,146	59.4	12,245	55.6	12,850	56.7	9,903	47.1
4 Clouston	9,210	55.4	9,159	54.3	10,708	59.4	10,284	60.4	10,377	59.4	10,907	59.5	12,204	59.0	10,929	53.8
Hamlets																
5 Davis	10,131	57.7	10,306	57.5	10,679	58.2	11,190	59.5	16,869	61.0	15,218	57.5	16,489	56.7	10,128	49.5
6 Mennon	16,669	59.6	18,532	64.1	19,678	65.3	15,803	63.7	16,485	68.0	16,003	67.0	11,791	65.4	8,540	56.5
7 Carlton	25,136	56.7	24,835	57.7	24,848	55.6	23,932	55.5	26,292	57.7	24,982	57.6	25,932	57.5	24,318	50.2
Villages																
8 MacDowall	10,218	54.0	9,611	51.7	10,601	55.5	9,348	52.9	9,286	50.3	8,705	52.4	9,538	52.0	8,346	46.7
9 Osler	19,287	60.6	21,254	65.2	20,077	62.5	18,624	61.3	18,954	64.7	20,213	63.3	23,047	62.0	13,434	60.3
10 Dalmeny	29,692	62.0	33,297	63.9	32,361	62.4	36,232	62.9	33,034	65.4	30,423	63.7	32,906	63.6	29,114	57.5
11 Laird	28,663	63.7	29,550	64.0	31,440	66.3	30,892	66.5	31,473	70.2	31,142	69.0	28,111	63.1	23,282	56.7
12 Warman	7,909	57.9	7,856	59.2	5,963	55.0	6,061	58.9	5,998	59.6	5,143	56.6	-	-	-	-
13 Hepburn	30,812	65.3	31,244	67.0	31,699	67.9	32,516	69.0	31,963	68.0	32,563	67.9	29,524	65.0	23,723	59.9
Towns																
14 Hague	40,197	59.4	39,887	62.5	38,134	59.7	36,432	58.3	39,706	60.4	36,964	58.9	37,954	59.3	29,741	54.1
15 Langham	28,132	55.1	26,973	55.3	24,781	54.4	27,641	57.4	31,164	58.9	31,752	60.2	29,024	57.1	28,246	54.6
16 Duck Lake	16,748	45.5	14,563	43.5	15,700	47.5	15,438	45.7	16,577	47.9	16,933	50.7	16,466	48.1	14,046	43.8
17 Waldheim	34,118	61.6	34,353	61.1	36,953	62.8	37,757	64.3	38,417	67.6	37,565	64.3	37,991	64.8	34,755	59.6
Greater Towns																
18 Blaine Lake	55,988	61.9	55,984	61.7	59,388	64.3	61,444	65.1	61,743	66.0	61,058	64.8	60,908	63.1	58,348	57.4
19 Rosthern	39,775	55.1	41,062	55.5	40,357	54.2	41,240	56.0	45,600	57.5	45,533	57.0	45,185	55.3	44,487	51.0
Cities																
20 Prince Albert	65,069	57.2	67,897	57.3	71,914	58.9	70,730	58.2	67,915	56.6	68,715	55.6	73,462	56.3	82,320	51.6
Study Area Total	492,597	58.5	503,620	59.3	512,395	59.8	510,604	60.1	525,851	61.2	515,474	60.3	510,488	59.3	458,226	53.9

[a]Wheat Board Grains are: Wheat, Durum, Oats, Barley.
[b]Durum excluded from Wheat Board Grains in 1962-63.

Source: Canadian Wheat Board, Winnipeg.

TABLE 3.10B NUMBER AND PERCENT OF QUOTA ACRES DEVOTED TO CANADIAN WHEAT BOARD GRAINS, 1970-71 AND 1971-72

Delivery Point	1970-71[a] Seeded Acres[c]	1970-71[a] Percent[d]	1971-72[b] Assigned Quota Acres[e]	1971-72[b] % of Total Quota Acres
Too Small to Classify				
1 Arma	-	-	-	-
2 La Plaine	2,188	29.5	-	-
3 Red Deer Hill	6,093	35.0	16,066	81.3
4 Clouston	6,955	37.1	13,206	68.8
Hamlets				
5 Davis	5,953	33.9	16,377	80.7
6 Mennon	5,627	36.9	14,488	94.6
7 Carlton	12,515	29.2	34,648	70.2
Villages				
8 MacDowall	6,055	37.6	14,412	88.4
9 Osler	12,159	48.1	33,171	97.5
10 Dalmeny	17,920	36.3	48,086	94.4
11 Laird	13,123	36.0	30,443	68.6
12 Warman	-	-	-	-
13 Hepburn	16,260	41.8	38,617	95.4
Towns				
14 Hague	25,072	43.4	58,255	92.9
15 Langham	20,882	39.2	53,987	95.0
16 Duck Lake	8,930	30.3	25,010	85.3
17 Waldheim	21,879	40.7	46,623	88.6
Greater Towns				
18 Blaine Lake	27,093	30.1	85,730	81.0
19 Rosthern	28,345	32.9	84,590	83.2
Cities				
20 Prince Albert	48,290	33.2	132,782	75.1
Study Area Total	285,339	35.6	746,491	83.3

[a]Calculated from Table 2.7.
[b]Calculated from Table 3.9.
[c]Acres seeded to CWB grains of wheat, durum, oats and barley.
[d]CWB grains acreage as a percent of total acres devoted to CWB grains plus summer fallow and forage crops (i.e., same composition as "specified acres" in previous years).
[e]Quota acres assigned to CWB grains of wheat, durum, oats and barley.

Quotas Required to Fill Elevator Storage Capacity

Table 3.11 shows the relationship between elevator storage capacity and quota acreage for the two crop years 1969-70 and 1971-72. For 1969-70 the quota acreage is simply the specified acreage, while for 1971-72 quota acreage is based on assigned acreage as explained in the text accompanying Table 3.8. The ratio of bushel capacity to quota acres represents the number of quotas, in bushels per acre, required to completely fill an empty delivery point. As quota acres increase relative to storage capacity the number of quotas needed decrease, and vice versa. The lower the ratio the greater the demand for space at a delivery point.

There does not appear to be any correlation between size of community and the ratio, nor does there appear to be any significant change in the ratios between the two years except for Mennon, which dropped from a ratio of 6.7 to 3.3 as a result of a decrease in its storage capacity from 101 thousand to 51 thousand bushels. In 1969-70 the ratio varied from a low of 1.8 at MacDowall to a high of 7.7 at La Plaine. La Plaine was closed in 1971-72 and the ratio varied in that year from a low of 2.0, again at MacDowall, to a high of 5.4 at Hepburn. The average number of general quotas required to fill capacity in the study area (1969-70) was 4.0. The median number was 4.45 in 1969-70 and 3.3 in 1971-72. Thus, about one half the delivery points in 1969-70 could accommodate a 4.5 bushel general quota, assuming zero inventory and no outward shipments, and about one half could not. For example, Mennon would be about two-thirds full whereas Duck Lake would only be able to hold half of a 4.5 bushel quota. To the extent the Canadian Wheat Board seeks to equalize quota levels among producers to that extent also will those points with a low capacity-to-quota acres ratio maintain a higher throughput ratio[1] than those points with a high capacity-to-quota acres ratio.

Table 3.11 also shows the approximate number of railway boxcars needed at each delivery point to transport a one bushel quota. The required number of boxcars depends directly on the number of quota acres and as such generally increases with the size of community. The range was from five at La Plaine to 80 boxcars at Prince Albert in 1969-70. In all 425 boxcars were needed to move a general one bushel quota out of the study area.

Given that the supply of boxcars at any point in time is limited, one might say that a point like Duck Lake has a disadvantage relative to say, Mennon. Duck Lake requires 17 cars to move one quota and can only store 2.2 bushel quotas; whereas, Mennon requires only eight boxcars but can store 6.7 bushel quotas.

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[1]The through-put ratio is the total bushel receipts of a delivery point in one year divided by the total bushel storage capacity. See Table 3.7.

TABLE 3.11 ELEVATOR CAPACITY VERSUS QUOTA ACRES, AND NUMBER OF BOXCARS REQUIRED TO MOVE ONE BUSHEL PER QUOTA ACRE BY DELIVERY POINT

Delivery Point	Elevator Bushel Capacity Aug. 1/69	Quota Acres 1969-70[a]	Ratio of Bushel Capacity to Quota Acres 1969-70	No. of Boxcars to Move One Bushel Per Quota Acre 1969-70[b]	Ratio of Bushel Capacity to Quota Acres 1971-72
Too Small to Classify					
1 Arma	30,000	Storage only	-	-	Closed
2 La Plaine	67,000	8,648	7.7	5	Closed
3 Red Deer Hill	48,000	21,024	2.3	11	2.4
4 Clouston	48,000	20,333	2.4	11	2.5
Hamlets					
5 Davis	61,000	20,480	3.0	11	3.0
6 Mennon	101,000	15,110	6.7	8	3.3
7 Carlton	232,000	48,446	4.8	25	4.7
Villages					
8 MacDowall	33,000	17,860	1.8	9	2.0
9 Osler	107,000	22,293	4.8	12	3.1
10 Dalmeny	222,000	50,673	4.4	26	4.4
11 Laird	229,000	41,034	5.6	21	5.2
12 Warman	30,000	Storage only	-	-	Closed
13 Hepburn	218,000	39,572	5.5	20	5.4
Towns					
14 Hague	250,000	55,004	4.5	28	4.0
15 Langham	175,300	51,722	3.4	26	3.1
16 Duck Lake	70,200	32,307	2.2	17	2.4
17 Waldheim	196,000	56,599	3.5	29	3.7
Greater Towns					
18 Blaine Lake	459,000	101,680	4.5	51	4.3
19 Rosthern	399,000	87,238	4.6	44	3.9
Cities					
20 Prince Albert	407,000	159,518	2.6	80	3.1
Total Study Area	3,382,500	849,541	4.0	425	3.7

[a]Same as specified acres, Table 2.6.

[b]Assume 2,000 bushels per boxcar.

Number of Boxcars Per Shunt That Can Be Loaded

The number of boxcars that an elevator operator can load in one group is limited by the length of the rail siding and the location of the elevator on the siding. Thus, while a siding may be able to accommodate 20 boxcars, perhaps only five or six cars can be loaded ready for collection by a train at one call. The number of car-lengths between the elevator spout and the neighbouring elevator company's spout or the ends of the siding is crucial.

Data for each delivery point and each elevator company are given in Table 3.12. Generally, the number of boxcars per delivery point increases with the size of the community, but considerable variation exists. The range is from five at Davis to 30 at Rosthern.

Using Duck Lake and MacDowall as examples, Duck Lake required 17 boxcars to move a one bushel quota (Table 3.11) but is able to load only six boxcars in one shunt. MacDowall needed nine boxcars for one quota and can load as many as 12 boxcars per shunt. Clearly, MacDowall has an advantage.

TABLE 3.12 MAXIMUM NUMBER OF BOXCARS PER SHUNT THAT CAN BE LOADED BY DELIVERY POINT AND ELEVATOR COMPANY, 1969-70

Delivery Point	Number of Boxcars per Point		Elevator Company	Number of Boxcars per Elevator Co.
Too Small to Classify				
1 Arma	6	C.N.	Saskatchewan Wheat Pool	6
2 La Plaine	10	C.N.	Saskatchewan Wheat Pool A + B	10
3 Red Deer Hill	6	C.N.	Saskatchewan Wheat Pool	6
4 Clouston	10	C.N.	Federal Grain Ltd.	10
Hamlets				
5 Davis	5	C.N.	Saskatchewan Wheat Pool	5
6 Mennon	12	C.N.	Saskatchewan Wheat Pool	5
			National Grain Co. Ltd.	7
7 Carlton	19	C.N.	Saskatchewan Wheat Pool	5
			Pioneer Grain Co. Ltd.	5
			United Grain Growers Ltd.	9
Villages				
8 MacDowall	12	C.N.	Saskatchewan Wheat Pool	12
9 Osler	13	C.N.	Saskatchewan Wheat Pool	4
			Pioneer Grain Co. Ltd.	9
10 Dalmeny	24	C.N.	Saskatchewan Wheat Pool	5
			National Grain Co. Ltd.	19
11 Laird	26	C.N.	Saskatchewan Wheat Pool	8
			National Grain Co. Ltd.	5
			United Grain Growers Ltd.	13
12 Warman	6	C.N.	Saskatchewan Wheat Pool	6
13 Hepburn	20	C.N.	Saskatchewan Wheat Pool	5
			United Grain Growers Ltd.	5
			National Grain Co. Ltd.	10
Towns				
14 Hague	28	C.N.	Saskatchewan Wheat Pool	5
			Pioneer Grain Co. Ltd.	10
			United Grain Growers Ltd.	13
15 Langham	16	C.N.	Saskatchewan Wheat Pool	10
			National Grain Co. Ltd.	6
16 Duck Lake	6	C.N.	Saskatchewan Wheat Pool	6

(continued)

TABLE 3.12 MAXIMUM NUMBER OF BOXCARS PER SHUNT THAT CAN BE LOADED BY DELIVERY POINT AND ELEVATOR COMPANY, 1969-70 (concluded)

Delivery Point	Number of Boxcars per Point		Elevator Company	Number of Boxcars per Elevator Co.
17 Waldheim	18	C.N.	Saskatchewan Wheat Pool	7
			National Grain Co. Ltd.	8
			United Grain Growers Ltd.	3
Greater Towns				
18 Blaine Lake	18	C.N.	Saskatchewan Wheat Pool	3
			United Grain Growers Ltd.	3
			Federal Grain Ltd.	6
			National Grain Co. Ltd.	6
19 Rosthern	30	C.N.	Pioneer Grain Co. Ltd.	3
			Saskatchewan Wheat Pool	13
			United Grain Growers Ltd.	14
Cities				
20 Prince Albert	14	C.N.	Federal Grain Ltd.	3
			United Grain Growers Ltd.	4
			Saskatchewan Wheat Pool	7

Source: Canadian Grain Commission, Winnipeg.

Block Loading System for Grain

The beginning of the 1969-70 crop year was the start of a new system of issuing shipping orders and allocating boxcars, known as the Canadian Wheat Board Block Loading System. The "blocks" are comprised of the grain delivery points situated on specified groups of contiguous railway subdivisions, with those of one railway company being kept separate from the other.

Improved communication between the Board and the elevator operators allows the Board to know the quantities of each kind and grade of grain available for forwarding from each point, and thus from each block. The Board accordingly is able to issue shipping orders to the grain companies represented in each block, and the companies can then allocate boxcars to their elevators in the block to ship the correct kind and grade of grain the Wheat Board needs in forward positions.

Table 3.13 lists the delivery points in the study area, grouped in their respective loading blocks. Also shown are the names of the railway subdivisions and the number of cars that can be loaded at one time at each point.

TABLE 3.13 BLOCK LOADING SYSTEM FOR GRAIN IN THE STUDY AREA

Shipping Block & Delivery Points	Railway Subdivision	Number of Boxcars Per Point
Prince Albert Main Block No. 27 (C.N.)		
1 Arma	Duck Lake	6
2 La Plaine	Duck Lake	10
4 Clouston	Duck Lake	10
6 Mennon	Carlton	12
7 Carlton	Carlton	19
8 MacDowall	Duck Lake	12
9 Osler	Duck Lake	13
10 Dalmeny	Langham	24
11 Laird	Carlton	26
12 Warman	Langham	6
13 Hepburn	Carlton	20
14 Hague	Duck Lake	28
15 Langham	Langham	16
16 Duck Lake	Duck Lake	6
17 Waldheim	Carlton	18
18 Blaine Lake	Blaine Lake	18
19 Rosthern	Duck Lake	30
20 Prince Albert	Duck Lake	14
Prince Albert South Block No. 25 (C.N.)		
3 Red Deer Hill	Cudworth	6
5 Davis	Tisdale	5

Source: Canadian Grain Commission, Winnipeg.

Farm Trucks

Table 3.14 presents estimates of the number, model year and size distribution of farm trucks registered in the Rosthern study region. While it is difficult to translate gross vehicle weights into ton capacities, those trucks in the 0-6,000 pound group represent one-half ton trucks and those in the upper end of the scale (say, over 21,000 pounds) represent three and four ton trucks.

A total of 2,496 farm trucks were matched with 1,666 permit holders in the study area.[1] Nearly one half (46 percent) of the trucks were in the two smallest size groups. The average size of farm truck was in the 11,001-13,000 pound group. About 53 percent of the trucks were over ten years old (i.e., prior to 1960-61).

Using the same data sources, the Canadian Transport Commission estimated that of the 1,666 permit holders 1,003 owned one truck, 523 owned two trucks, 120 owned three trucks and 20 owned four or more trucks.

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[1]This accounted for 76 percent of the 2,192 permits issued in 1970-71, Table 3.2.

TABLE 3.14 ESTIMATED NUMBER OF FARM TRUCKS BY SIZE AND YEAR IN THE STUDY AREA, 1970[a]

Size of Truck (Gross Vehicle Weight)	Years: Up to 1945	1946 to 1947	1948 to 1949	1950 to 1951	1952 to 1953	1954 to 1955	1956 to 1957	1958 to 1959	1959 to 1960	1960 to 1961	1961 to 1962	1962 to 1963	1963 to 1964	1964 to 1965	1965 to 1966	1966 to 1967	1967 to 1968	1968 to 1969	1969 to 1970	Total	Percent
- lbs. -	- number of trucks -																				
0 - 6,000	4	4	20	29	47	21	19	8	12	13	14	12	22	21	34	44	44	47	46	461	18.5
6,001 - 9,000	3	3	18	54	56	16	24	19	27	16	13	23	29	49	54	75	86	63	58	686	27.5
9,001 - 11,000	5	11	50	82	98	15	8	1	12	3	2	3	12	5	10	7	10	8	6	348	13.9
11,001 - 13,000	2	8	50	76	72	15	14	3	9	4	9	4	8	5	4	11	7	5	3	309	12.4
13,001 - 15,000	3	1	6	18	18	5	3	3	1	1	2	0	3	2	13	4	4	5	3	95	3.8
15,001 - 17,000	1	6	6	7	17	2	3	1	0	4	2	3	1	0	6	5	7	3	0	74	2.9
17,001 - 19,000	4	8	9	13	19	6	5	4	2	3	1	3	0	2	1	2	6	1	1	90	3.6
19,001 - 21,000	9	8	12	21	24	5	10	1	5	4	2	5	1	4	6	5	6	3	1	132	5.3
21,001 - 23,000	0	1	1	4	2	3	3	0	0	4	0	0	1	2	0	7	3	1	0	32	1.3
23,001 - 25,000	2	7	5	9	15	6	10	2	1	1	2	1	4	2	1	6	4	3	2	83	3.3
25,001 - 27,000	0	3	2	2	8	2	2	0	2	3	0	2	2	2	3	3	2	1	0	39	1.6
27,001 - 29,000	3	1	5	6	14	7	14	8	4	7	6	6	6	9	9	11	17	5	7	145	5.8
Over 29,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0.1
Total	36	61	184	321	390	103	115	50	75	63	53	62	89	103	141	181	196	146	127	2,496	100.0
Percent	1.4	2.4	7.4	12.9	15.6	4.1	4.6	2.0	3.0	2.5	2.1	2.5	3.6	4.1	5.7	7.3	7.9	5.8	5.1	100.0	

[a]This matrix is a result of a clerical match between the 1970 Saskatchewan motor vehicle registrations, and the 1970-71 Canadian Wheat Board permit holders. Names and addresses were matched to identify which trucks were owned by each permit holder. As there were difficulties in matching, the number of permit holders at a given delivery point may not equal total permit holders but approximately 76 percent of all possible matches were completed with an estimated error of 10 percent. Two other points may also account for the difference: (1) it is a recognizable fact that some farmers arrange to have their grain hauled by a neighbour; (2) some farm trucks are used for on-farm use only and as such are not registered.

Source: Compiled by the Canadian Transport Commission from Canadian Wheat Board and Saskatchewan Treasury Department, Taxation Branch data.

Farm to Elevator Hauling Distances

Tributary areas from which grain delivery points draw grain from producers were plotted for each of the crop years 1962-63 and 1969-70 as shown in Figures 4.1 and 4.2. Each quarter section, as recorded in individual Canadian Wheat Board permit books, was plotted producing a graphic portrayal of the relative sizes and shapes of hinterlands. Naturally, unimproved farm land is included by this method of plotting. Excluded are crown land, waste land, bodies of water and farm land tributary to delivery points outside the study area.

Table 3.15 is a comparison of farm to elevator grain hauling distances between the two crop years. In one sense, average hauling distance is also a measure of geographic size of a hinterland, since hauling distances generally increase as more acres are added to a hinterland. The data were derived from the 1962-63 and 1969-70 hinterland maps (Figures 4.1 and 4.2) by measuring the grid distance between the delivery point and the midpoint of each section block. The delivery point was always taken as being located at one corner of a section resulting in a minimum distance of 1.0 mile and all subsequent distances as 1.0 plus 1, 2 or 3 miles, etc., to the outer extreme of the hinterland.

The average distance each quarter section is located from its delivery point was calculated as follows: the distance of each section, as derived above, was weighted or multiplied by the relevant[1] number of quarter sections within that section, the products of which were accumulated; and the sum then divided through by the total number of quarter sections in the hinterland. So one might say the resulting average is the average distance each section is from the delivery point weighted by the number of relevant quarter sections.

As an estimate of farm to elevator hauling distances this method may be criticized for not taking into account actual locations of on-farm, grain storage facilities nor the availability of roads. These criticisms may not be too serious, however, since grain is first hauled from the farm field to the farm granary and then to the country elevator at a later date. In effect, therefore, the hauling activity originates from each quarter section. It is difficult to know the magnitude of the error introduced by ignoring roads. The seriousness of the error will be greater for a hinterland with fewer roads than for a hinterland with a well developed network of roads. To the extent that there is a bias introduced by ignoring roads the method used, conceivably, under-estimates hauling distances.

The average hauling distance in the study area in 1969-70 was 8.00 miles, slightly higher than the 1962-63 average of 7.31 miles. The maximum distance increased five miles from 33 (Hague and Prince Albert) to 38 miles (Blaine Lake). The lowest maximum distance was only six miles at Arma in 1962-63 and seven miles at Red Deer Hill in 1969-70.

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[1]A "relevant" quarter section is one which was recorded in someone's delivery permit book and which was contained in the hinterland of the delivery point in question.

The largest hinterland in terms of average hauling distance in both crop years was Prince Albert, which had an average of 13.38 and 15.11 miles. Arma in 1962-63 and Red Deer Hill in 1969-70 had the shortest average hauling distance, 2.68 miles and 3.68 miles, respectively.

Changes in average hauling distances between the two crop years were small. Only three delivery points, Carlton, Duck Lake and Prince Albert, showed distance changes of one mile or more. The largest decrease occurred at Duck Lake (-1.00 mile) and the largest increase occurred at Prince Albert (1.73 miles). Again, a greater proportion of smaller centers experienced decreased hauling distances than larger centers.

TABLE 3.15 FARM TO ELEVATOR HAULING DISTANCES BY DELIVERY POINT, 1962-63 AND 1969-70

Delivery Point	1962-63[a] Maximum	1962-63[a] Average	1969-70[a] Maximum	1969-70[a] Average	Change Maximum	Change Average
			- miles -			
Too Small to Classify						
1 Arma	6	2.68	Storage only			
2 La Plaine	7	3.45	18	3.96	+11	+0.51
3 Red Deer Hill	21	4.45	7	3.68	-14	-0.77
4 Clouston	17	4.56	10	4.31	-7	-0.25
Hamlets						
5 Davis	11	4.94	12	5.46	+1	+0.52
6 Mennon	22	4.56	8	4.29	-14	-0.27
7 Carlton	21	5.79	34	6.90	+13	+1.11
Villages						
8 MacDowall	10	4.42	9	3.98	-1	-0.44
9 Osler	11	4.92	15	4.91	+4	-0.01
10 Dalmeny	18	5.88	23	6.02	+5	+0.14
11 Laird	18	4.78	19	4.82	+1	+0.04
12 Warman	11	3.74	Storage only			
13 Hepburn	26	5.52	30	5.63	+4	+0.11
Towns						
14 Hague	33	6.51	24	6.02	-9	-0.49
15 Langham	28	7.27	28	8.00	0	+0.73
16 Duck Lake	21	7.61	20	6.61	-1	-1.00
17 Waldheim	27	5.77	19	5.92	-8	+0.15
Greater Towns						
18 Blaine Lake	24	8.53	38	9.28	+14	+0.75
19 Rosthern	24	7.70	25	7.21	+1	-0.49
Cities						
20 Prince Albert	33	13.38	37	15.11	+4	+1.73
Total Study Area	33	7.31	38	8.00	+5	+0.69

[a]The minimum distance in all cases was assumed to be 1.0 mile; thus the range in distances for each hinterland is the maximum minus 1.0 mile.

PART IV

A SUGGESTED ALTERNATIVE GRAIN COLLECTION SYSTEM

The preceding parts have dealt with community attributes, grain production characteristics and grain marketing characteristics in the study area. This last part attempts to show what changes might be expected if some of the delivery points closed. The alternative system suggested has no official status whatsoever and as such cannot be construed as a set of recommendations nor as a set of definitive adjustments that will in fact occur. What the authors have done is to scan all the delivery points in the region and select from them those which they believed to be the least likely to survive as grain shipping points, having regard to the density of traffic on the rail lines serving them, the number of producers who have taken out delivery permits at those points, and the distance from other delivery points that might remain in operation. In addition, consideration was given to the wishes of the railway companies and the elevator companies. The evidence used to gauge what the railways wanted was the applications, for permission to abandon lines, filed at one time with the Canadian Transport Commission. The thoughts of the elevator companies were based on calculated guesses, bolstered by the history of the volume of grain per year that has been put through the point. The map showing what the remaining delivery point hinterlands would look like (Figure 4.3) is the result of closing the points so chosen. Without the exercise of hypothetically closing down elevator points, this map would not be possible and readers would be denied a glimpse into what could possibly be in store for the people living in these areas. An approximation of what the region would look like under this sort of rationalization is all that is intended.

For purposes of this study six delivery points were assumed closed; namely, the five points on the Carlton railway subdivision and Davis on the Tisdale subdivision (Table 4.1). This left 12 open points in the study area. La Plaine was the only point which was unaffected by additional grain receipts after rationalization.

Figure 4.3 was derived from 1969-70 hinterlands by a process of diverting each quarter section from those points assumed closed to probable alternate delivery points assumed to be remaining open. While an element of subjective judgement was involved the following criteria served as guides for selecting the most probable alternate delivery point for each quarter section: (1) shortest hauling distance; (2) road conditions; and (3) size of community and number of services present at each alternate delivery point. These criteria are listed in descending order of importance, although, in some instances the second took precedence over the first. The third criterion was given only minor importance.

TABLE 4.1 STATUS OF DELIVERY POINTS AFTER DIVERSION, 1969-70[a]

Points Assumed Closed	Points Remaining Open	
	Affected by Diversion	Unaffected by Diversion
5 Davis	3 Red Deer Hill	2 La Plaine[b]
6 Mennon	4 Clouston	
7 Carlton	8 MacDowall	
11 Laird	9 Osler	
13 Hepburn	10 Dalmeny	
17 Waldheim	14 Hague	
	15 Langham	
	16 Duck Lake	
	18 Blaine Lake	
	19 Rosthern	
	20 Prince Albert	

[a]Arma and Warman were closed for storage prior to 1969-70.
[b]La Plaine closed in July, 1971 so no grain receipts were diverted to it.

Diversion of Acreages and Bushels Conditional on Closing Certain Delivery Points

Tables 4.2 and 4.3 show the probable diversion of acreages and bushels that would occur after specified points were assumed closed. In Table 4.2 percentage distribution figures were determined on the basis of number of quarter sections diverted to each alternate delivery point. For example, of the total number of quarters in Laird's hinterland 92.6 percent were diverted to Rosthern, 5.3 percent to Duck Lake and 2.1 percent to Blaine Lake. Total farm acreage at Laird in 1969-70 was 50,374 (Table 2.6), thus, 46,646 acres went to Rosthern, 2,670 acres to Duck Lake and 1,058 acres to Blaine Lake. In total for the study area 267,305 acres were diverted representing 25 percent of the just over one million-acre total.

The quarter section percentage distribution was also the basis on which bushel diversion estimates were made. Again using Laird to illustrate, in 1969-70 it had receipts of 348,267 bushels, 92.6 percent of which were assumed to go to Rosthern, 5.3 percent to Duck Lake and 2.1 percent to Blaine Lake. Since annual receipts fluctuate considerably, bushel diversions based on the ten-year average 1960-61 to 1969-70 were similarly calculated. Had the six points specified in Table 4.2 been closed in 1969-70, an estimated total of 1.7 million bushels would have been diverted to alternate points compared to a ten-year average of 2.1 million bushels.

The delivery points in Table 4.2 are ordered in ascending order of bushels diverted, basis the ten-year average receipts. This covers the "loss" side of the picture.

TABLE 4.2 DIVERSIONS (FROM-TO) OF ACREAGES AND BUSHELS CONDITIONAL ON THE CLOSING OF SPECIFIED DELIVERY POINTS, BASIS 1969-70

From Closed Point To Diversion Point	Percent Diverted	Acres Diverted 1969-70	Bushels Diverted 1969-70	Bushels Diverted 10-yr. Average 1960-61 to 1969-70
From: 5 Davis				
To: 4 Clouston	9.0	2,275	14,632	13,383
3 Red Deer Hill	18.1	4,574	29,426	26,916
20 Prince Albert	72.9	18,425	118,519	108,405
Total	100.0	25,274	162,577	148,704
From: 6 Mennon				
To: 9 Osler	11.2	1,887	12,049	24,889
15 Langham	22.4	3,775	24,097	49,778
10 Dalmeny	66.4	11,188	71,430	147,555
Total	100.0	16,850	107,576	222,222
From: 7 Carlton				
To: 18 Blaine Lake	0.7	474	2,796	2,773
8 MacDowall	4.2	2,840	16,778	16,635
19 Rosthern	9.1	6,153	36,353	36,042
16 Duck Lake	86.0	58,156	343,550	340,622
Total	100.0	67,623	399,477	396,072
From: 13 Hepburn				
To: 9 Osler	1.5	657	4,474	6,078
18 Blaine Lake	3.6	1,578	10,737	14,585
15 Langham	10.9	4,777	32,510	44,161
14 Hague	23.9	10,475	71,283	96,830
10 Dalmeny	60.1	26,340	179,252	243,493
Total	100.0	43,827	298,256	405,147
From: 11 Laird				
To: 18 Blaine Lake	2.1	1,058	6,864	8,881
16 Duck Lake	5.3	2,670	18,458	22,415
19 Rosthern	92.6	46,646	322,945	391,626
Total	100.0	50,374	348,267	422,922
From: 17 Waldheim				
To: 10 Dalmeny	5.4	3,421	21,924	26,384
18 Blaine Lake	19.0	12,038	77,140	92,835
14 Hague	26.3	16,663	106,778	128,503
19 Rosthern	49.3	31,235	200,159	240,882
Total	100.0	63,357	406,001	488,604
Study Area Total		267,305	1,722,154	2,083,671

The "gain" side of the diversions are presented in Table 4.3 where the delivery points remaining open are listed and the number of acres and bushels diverted to each open point are shown. The acreage and bushel figures were taken from Table 4.2. The 'percent diverted' data were then computed from the acreage diversion data. Again, the delivery points are listed in ascending order of benefit, based on the ten-year average receipts.

Clouston gained the least number of bushels, 13,383 basis ten-year average, and Rosthern the most, 668,550 bushels.

TABLE 4.3 DIVERSIONS (TO-FROM) OF ACREAGES AND BUSHELS CONDITIONAL ON THE CLOSING OF SPECIFIED DELIVERY POINTS, BASIS 1969-70

To Diversion Point From Closed Point	Percent Diverted	Acres Diverted 1969-70	Bushels Diverted 1969-70	Bushels Diverted 10-yr. Average 1960-61 to 1969-70
To: 4 Clouston				
From: 5 Davis	100.0	2,275	14,632	13,383
Total	100.0	2,275	14,632	13,383
To: 8 MacDowall				
From: 7 Carlton	100.0	2,840	16,778	16,635
Total	100.0	2,840	16,778	16,635
To: 3 Red Deer Hill				
From: 5 Davis	100.0	4,574	29,426	26,916
Total	100.0	4,574	29,426	26,916
To: 9 Osler				
From: 13 Hepburn	25.8	657	4,474	6,078
6 Mennon	74.2	1,887	12,049	24,889
Total	100.0	2,544	16,523	30,967
To: 15 Langham				
From: 6 Mennon	44.1	3,775	24,097	49,778
13 Hepburn	55.9	4,777	32,510	44,161
Total	100.0	8,552	56,607	93,939
To: 20 Prince Albert				
From: 5 Davis	100.0	18,425	118,519	108,405
Total	100.0	18,425	118,519	108,405
To: 18 Blaine Lake				
From: 7 Carlton	3.1	474	2,796	2,773
11 Laird	7.0	1,058	6,864	8,881
13 Hepburn	10.4	1,578	10,737	14,585
17 Waldheim	79.5	12,038	77,140	92,835
Total	100.0	15,148	97,537	119,074
To: 14 Hague				
From: 13 Hepburn	38.6	10,475	71,283	96,830
17 Waldheim	61.4	16,663	106,778	128,503
Total	100.0	27,138	178,061	225,333
To: 16 Duck Lake				
From: 11 Laird	4.4	2,670	18,458	22,415
7 Carlton	95.6	58,156	343,550	340,622
Total	100.0	60,826	362,008	363,037
To: 10 Dalmeny				
From: 17 Waldheim	8.4	3,421	21,924	26,384
6 Mennon	27.3	11,188	71,430	147,555
13 Hepburn	64.3	26,340	179,252	243,493
Total	100.0	40,949	272,606	417,432
To: 19 Rosthern				
From: 7 Carlton	7.3	6,153	36,353	36,042
17 Waldheim	37.2	31,235	200,159	240,882
11 Laird	55.5	46,646	322,945	391,626
Total	100.0	84,034	559,457	668,550
Study Area Total		267,305	1,722,154	2,083,671

Size of Hinterlands Before and After Diversion

Obviously, there was a change in the number of acres in each hinterland affected by diversion. Table 4.4 shows the sizes of the hinterlands of the 11 open delivery points before and after diversion. Clouston gained the least number of acres both in absolute and relative terms. Prince Albert gained the largest number of acres (224,182) and Duck Lake experienced the largest percentage increase (126.3 percent). On the average in the study area the hinterlands increased 33.9 percent.

TABLE 4.4 SIZE OF HINTERLANDS BEFORE AND AFTER DIVERSION, BASIS 1969-70

Diversion Point	Before Diversion Original Size 1969-70	Acreage Increase	After Diversion Enlarged Size	Percent Increase
	- acres -	- acres -	- acres -	
4 Clouston	26,484	2,275	28,759	8.6
8 MacDowall	28,081	2,840	30,921	10.1
3 Red Deer Hill	26,337	4,574	30,911	17.4
9 Osler	27,872	2,544	30,416	9.1
15 Langham	63,321	8,552	71,873	13.5
20 Prince Albert	205,757	18,425	224,182	8.9
18 Blaine Lake	126,732	15,148	141,880	11.9
14 Hague	65,073	27,138	92,211	41.7
16 Duck Lake	48,148	60,826	108,974	126.3
10 Dalmeny	58,430	40,949	99,379	70.1
19 Rosthern	112,578	84,034	196,612	74.6
Study Area Total	788,813	267,305	1,056,118[a]	33.9

[a]La Plaine is not included in this total.

Through-Put Ratios Before and After Diversion

Upon "rationalizing" the grain delivery point system in the study area by assuming six delivery points closed, total storage capacity was reduced by just over one million bushels or about 31 percent. Assuming further that no new storage space is constructed, through-put ratios after diversion were calculated and are presented in Table 4.5.[1]

Based on 1960-61 to 1969-70, the average through-put ratio for the entire study area only increased from 1.94 to 2.91. Before diversion six of the 11 delivery points had through-put ratios less than 2.0 and the highest ratio was 3.28 (basis ten-year average) at Red Deer Hill. After diversion one point, Blaine Lake, had a ratio less than 2.0 and nine points were in the range of 2.0 to 3.9. Duck Lake had the highest ratio at 7.58 which is nearly triple its through-put ratio before diversion.

If, in fact, the economically optimum through-put ratio is something greater than 4.0 or 5.0, then even after diversion none of the country elevators in the study area should experience any difficulty in handling the additional through-put. For the 70 thousand bushel capacity elevator at Duck Lake to achieve a through-put ratio of 8.0, for example, between five and six boxcars per week would have to be loaded.

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[1]Through-put ratios for all delivery points before diversion are shown in Table 3.7.

TABLE 4.5 THROUGH-PUT RATIOS BY DELIVERY POINT BEFORE AND AFTER DIVERSION, BASIS 1969-70 AND PREVIOUS TEN-YEAR AVERAGE

	Before Diversion		After Diversion	
Diversion Point	Actual 1969-70	Ten-Year Average 1960-61 to 1969-70	1969-70	Ten-Year Average 1960-61 to 1969-70
4 Clouston	4.11	3.16	4.41	3.43
8 MacDowall	3.01	3.15	3.52	3.63
3 Red Deer Hill	2.91	3.28	3.53	3.82
9 Osler	1.41	1.84	1.56	2.13
15 Langham	1.96	1.86	2.28	2.39
20 Prince Albert	3.21	2.25	3.50	2.51
18 Blaine Lake	1.66	1.70	1.87	1.95
14 Hague	1.32	1.86	2.03	2.74
16 Duck Lake	3.04	2.60	8.20	7.58
10 Dalmeny	1.41	1.76	2.63	3.59
19 Rosthern	1.44	1.42	2.84	3.06
Total Study Area	1.87[a]	1.94[a]	2.72	2.91

[a]Average through-put ratio of all points open from Table 3.7.

Farm to Elevator Hauling Distances Before and After Diversion

Comparison of hauling distances before and after diversion are presented in Table 4.6. Firstly, the maximum and average hauling distances before diversion and the new maximum and average hauling distances after diversion for the delivery points assumed closed are shown. Secondly, the maximum and average hauling distances before and after diversion for the delivery points remaining open are shown.

For the study area as a whole average farm to elevator hauling distances increased by 1.79 miles, from 8.00 to 9.79 miles. Prior to diversion, the hinterland with the shortest average hauling distance was Red Deer Hill (3.68 miles) and the longest was Prince Albert (15.11 miles). Of those delivery points remaining open and affected by diversion the shortest average hauling distance was at Clouston (4.35 miles) and the longest was again Prince Albert (14.78 miles)[1].

The changes in hauling distances for the majority of open delivery points after diversion were small. Average hauling distance increased by less than one mile at seven points and by more than three miles at only one point (Rosthern).

Hauling distances for delivery points assumed closed increased considerably. For example, producers at Davis hauled their grain an average of 5.46 miles before diversion and 10.53 miles after diversion, which is an increase of 5.07 miles. The largest increase in average distance occurred at Laird (9.69 miles).

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[1]The fact that average hauling distance at Prince Albert actually decreased slightly after diversion can be explained by the location of the acreages added in relation to the shape of the hinterland. Much of the Prince Albert hinterland extends quite far north and east (Figure 4.2) while the acreage added was located at the south end, closer to the city of Prince Albert (Figure 4.3). Since average hauling distance is an average weighted by the number of quarter sections (see discussion of Table 3.15), adding more quarter sections close to the delivery point results in pulling the average downward.

TABLE 4.6 FARM TO ELEVATOR HAULING DISTANCES BY DELIVERY POINT BEFORE AND AFTER DIVERSION, BASIS 1969-70

Delivery Point	Before Diversion 1969-70		After Diversion Basis 1969-70		Change	
	Maximum	Average	Maximum	Average	Maximum	Average
	- miles -					
Points Assumed Closed						
5 Davis	12	5.46	17	10.53	+5	+5.07
6 Mennon	8	4.29	14	9.11	+6	+4.82
7 Carlton	34	6.90	20	11.65	-14	+4.75
13 Hepburn	30	5.63	19	13.13	-11	+7.50
11 Laird	19	4.82	21	14.51	+2	+9.69
17 Waldheim	19	5.92	21	15.30	+2	+9.38
Points Remaining Open						
2 La Plaine	18	3.96	18	3.96	0	0.0
4 Clouston	10	4.31	10	4.35	0	+0.04
8 MacDowall	9	3.98	20	4.97	+11	+0.99
3 Red Deer Hill	7	3.68	9	4.45	+2	+0.77
9 Osler	15	4.91	15	5.29	0	+0.38
15 Langham	28	8.00	28	8.23	0	+0.23
20 Prince Albert	37	15.11	37	14.78	0	-0.33
18 Blaine Lake	38	9.28	38	10.03	0	+0.75
14 Hague	24	6.02	24	8.04	0	+2.02
16 Duck Lake	20	6.61	20	9.07	0	+2.46
10 Dalmeny	23	6.02	23	8.91	0	+2.89
19 Rosthern	25	7.21	25	10.44	0	+3.23
Total Study Area	38	8.00	38	9.79	0	+1.79

Number of Permit Holders Before and After Diversion

If the alternative grain collection system postulated in this report were to take place there would also be adjustments in the number of permit holders associated with each delivery point affected. Based on the actual number of permits issued by delivery point in 1969-70, estimates were made of the probable number of permits at each delivery point after diversion (Table 4.7). These estimates were derived using the percentage distribution values in Table 4.2 in the same manner that acreage and bushel diversions were made. It was also assumed that there would be no attrition of producers as a result of rationalization.

In total, 527 permit holders would find it necessary to alter their delivery point, which represents 23.7 percent of the total 2,226 permit holders in the study area. Rosthern gained the largest number of permit holders with an increase of 173 added onto an original 237. The next largest increase was at Dalmeny which gained 99 permits. The number of permits at Duck Lake more than doubled.

TABLE 4.7 NUMBER OF PERMIT HOLDERS BY DELIVERY POINT BEFORE AND AFTER DIVERSION, BASIS 1969-70

Delivery Point	Number of Permit Holders Before Diversion	Number of Permit Holders After Diversion
Points Assumed Closed		
5 Davis	41	0
6 Mennon	42	0
7 Carlton	99	0
13 Hepburn	106	0
11 Laird	107	0
17 Waldheim	132	0
Points Assumed Open		
2 La Plaine	18	18
4 Clouston	62	66
8 MacDowall	65	69
3 Red Deer Hill	58	65
9 Osler	74	81
15 Langham	122	142
20 Prince Albert	449	479
18 Blaine Lake	270	302
14 Hague	155	215
16 Duck Lake	64	155
10 Dalmeny	125	224
19 Rosthern	237	410
Study Area Total	2,226	2,226

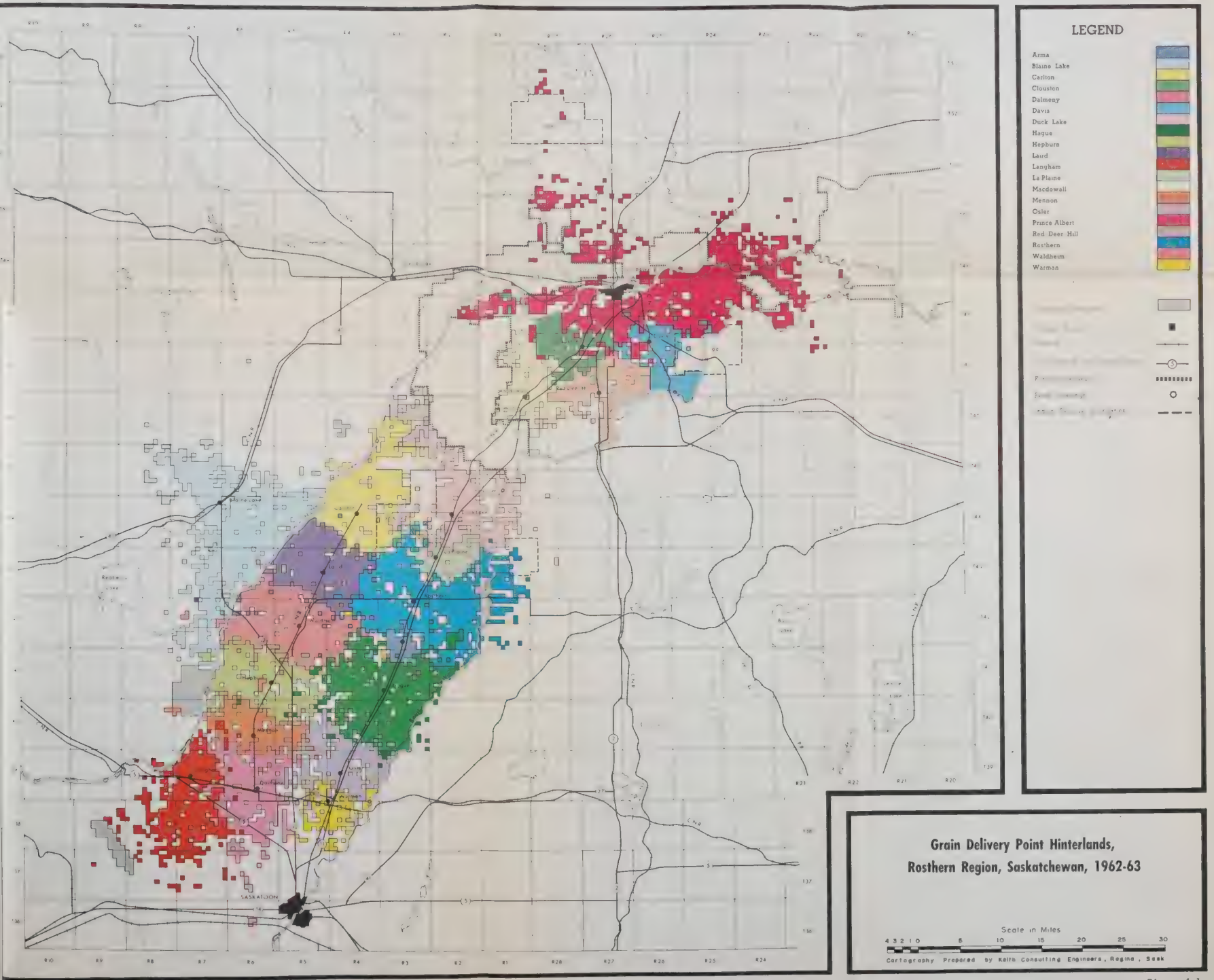

LEGEND
Arma
Blaine Lake
Carlton
Clousten
Dalmeny
Davis
Duck Lake
Hague
Hepburn
Laird
Langham
La Plaine
Macdowall
Mennon
Osler
Prince Albert
Red Deer Hill
Rosthern
Waldheim
Warman
SASKATOON
Grain Delivery Point Hinterlands,
Rosthern Region, Saskatchewan, 1962-63
Scale in Miles
4 3 2 1 0 5 10 15 20 25 30
Cartography Prepared by Keith Consulting Engineers, Regina, Sask

Figure 4.1

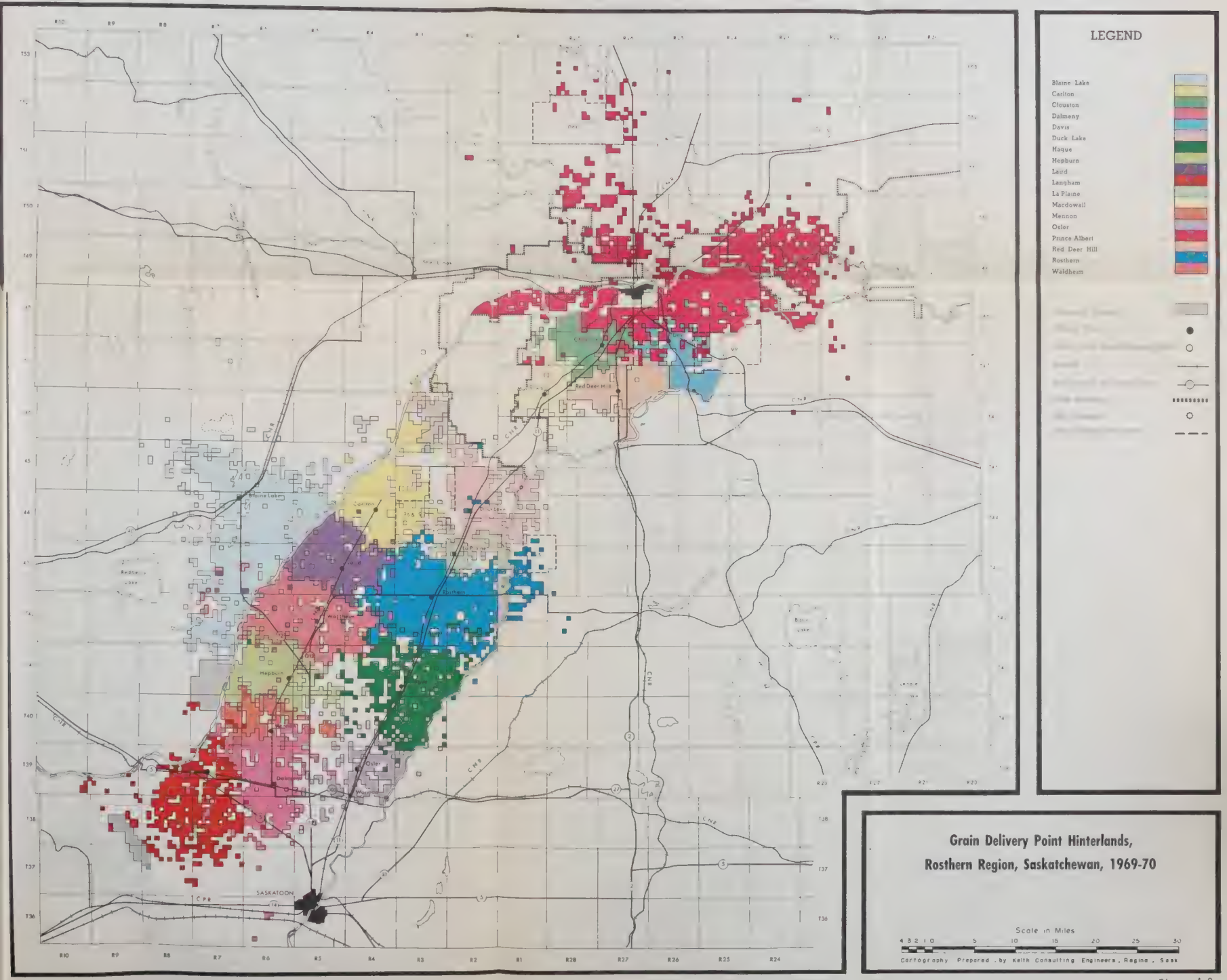

LEGEND
Blaine Lake
Carlton
Clouston
Dalmeny
Davis
Duck Lake
Haque
Hepburn
Laird
Langham
La Plaine
Macdowall
Mennon
Osler
Prince Albert
Red Deer Hill
Rosthern
Waldheim
Grain Delivery Point Hinterlands,
Rosthern Region, Saskatchewan, 1969-70
Scale in Miles
4 3 2 1 0 5 10 15 20 25 30
Cartography Prepared by Keith Consulting Engineers, Regina, Sask.

Figure 4.2

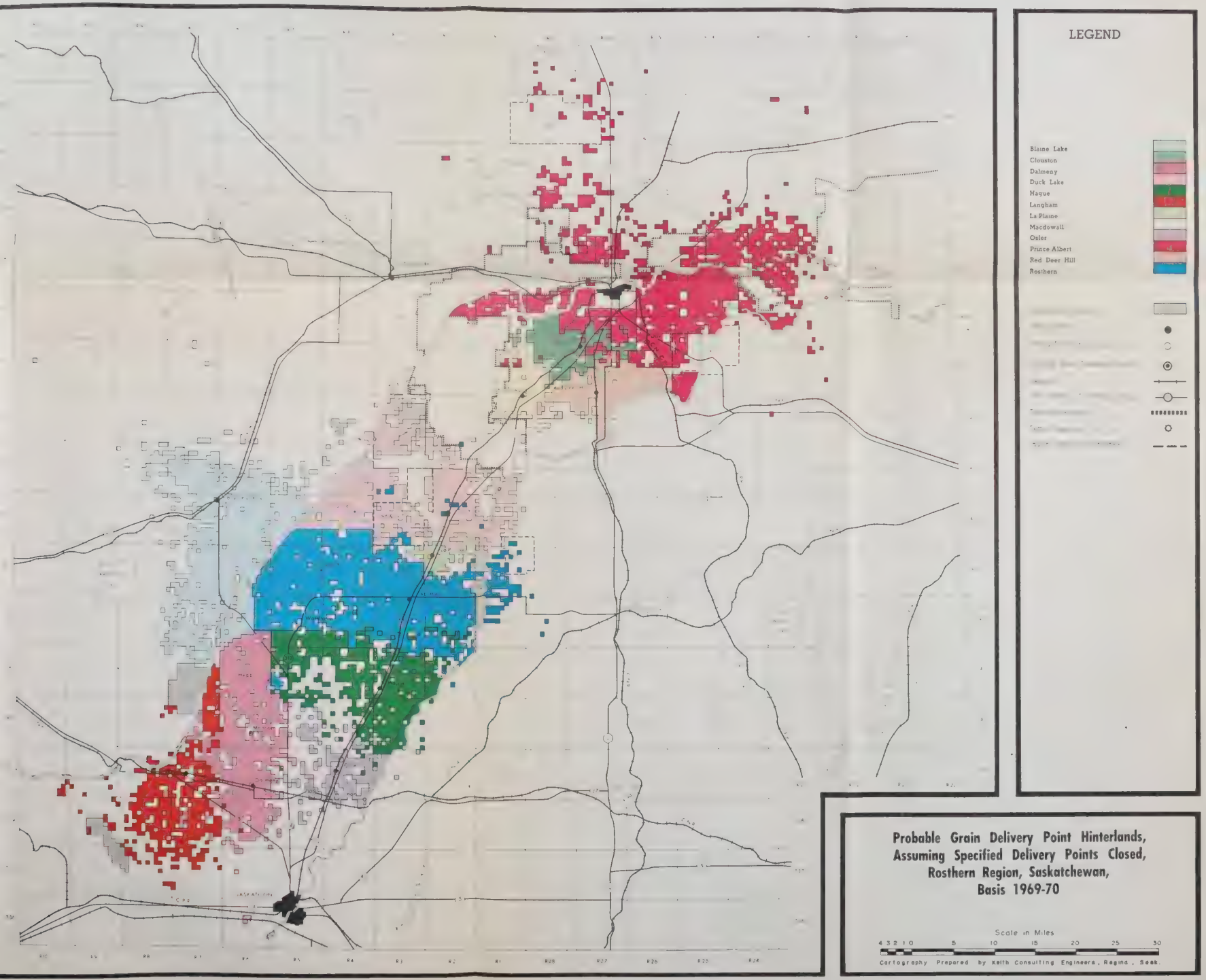

LEGEND
Blaine Lake
Clouston
Dalmeny
Duck Lake
Hague
Langham
La Plaine
Macdowall
Osler
Prince Albert
Red Deer Hill
Rosthern
Probable Grain Delivery Point Hinterlands,
Assuming Specified Delivery Points Closed,
Rosthern Region, Saskatchewan,
Basis 1969-70
Scale in Miles
4 3 2 1 0 5 10 15 20 25 30
Cartography Prepared by Keith Consulting Engineers, Regina, Sask.

Figure 4.3

PART V

REGULATION OF THE GRAIN INDUSTRY

The unfairness inherent in a situation involving a large number of sellers facing a very few buyers, which is what prevails in prairie grain marketing, led to the very high degree of regulation that characterizes the industry today. This takes the form of regulation of the grain warehouse industry, i.e., the elevators, by the Canadian Grain Commission; regulation of the grain marketers, including the producers, by the Canadian Wheat Board; and regulation of the grain carriers; i.e., railways, truckers, and lake vessel operators, by those two bodies plus the Canadian Transport Commission.

The following description of the activity of these regulatory bodies is not intended to be exhaustive by any means. It covers the main areas of the impact of regulation on producers, elevator operators and railways. It is included here in order to complete the picture shown in these Prairie Regional Studies in Economic Geography, because it is believed that the welfare of the farms and the communities is significantly influenced by regulation.

Canada Grain Act, Revised Statutes of Canada 1970 Ch. G-16

The Canadian Grain Commission superseded the Board of Grain Commissioners for Canada on April 1, 1971, by virtue of an amended Canada Grain Act passed by the Federal Parliament in 1970. Among several important changes in the Act is the definition of an elevator, (Section 2). For licensing purposes it is no longer required that the elevator be situated on a railway right-of-way. Any premises that meet certain construction standards specified by the Commission and where bulk grain can be received, weighed, elevated, stored and discharged into a transport conveyance qualifies for application for a licence to handle western grain.

The once familiar term "country elevator" has been changed to "primary elevator", for regulation purposes. It is defined as "an elevator the principal use of which is the receiving of grain directly from producers".

The costs of the Canadian Grain Commission are borne by the Federal Treasury, not by the farmers. The commissioners and their staff are public servants.

The Commission establishes and maintains standards of quality for Canadian grain, in the interests of the grain producers. Any dispute between the grain producer and grain buyer as to grade or dockage is settled by referring a small sample of the parcel of grain to the Canadian Grain Commission. As far as weighing goes, the elevator operator must allow the farmer every opportunity to verify the weight of his grain.

The Commission may consent to the mixing of different grades of grain in terminal and transfer elevators. Without such consent no such mixing is permitted. The Commission periodically checks the inventory of grain in each and all elevators.

Only a public carrier may transport grain described by an official grade name across a provincial boundary. Only a public carrier may transport any grain from Western Canada to Eastern Canada or out of Canada. On the other hand a public carrier may not deliver grain to a primary elevator without the consent of the Canadian Grain Commission.

Grain producers who qualify to ship a complete carload of grain to a terminal or a transfer elevator may have a rail car allocated to them for this purpose by the Canadian Grain Commission. Where it is in the public interest to do so the Federal Cabinet can order a railway company to spot cars for transporting grain at any point where the railway company supplies service. In such cases it is the grain producer's right to select the elevator of his choice or to load directly into the rail car.

The car order book is no longer used as the legal instrument to ensure equity in rail car supply.

The Canadian Grain Commission can issue regulations governing the activity in all the licenced elevators in order to ensure the orderly movement of grain.

The Canadian Grain Commission can set maximum freight rates for the carriage of Canadian grain by lake vessel between any Canadian points. This responsibility is given to the Commission under the Inland Water Freight Rates Act.

The Canadian Wheat Board Act, Revised Statutes of Canada 1970 Ch. C-12

The Canadian Wheat Board was created in the mid-depression year of 1935 when the prairie wheat pools and the prairie provincial governments, who had guaranteed the pools' bank loans, proved to be incapable of surviving the tremendous pressures caused by a great scarcity of sales all over the world together with below-cost prices for the wheat that was sold. Today the Canadian Wheat Board plays a dominant role in the marketing of grain in Western Canada. The Board has an indirect impact on the production of virtually all crops in the Prairie Provinces.

The Board consists of five commissioners appointed by the Federal Cabinet. It employs 575 support staff. Board members and staff receive their salaries and wages out of the proceeds from the sale of the farmers' grain. Indeed all the costs of the operation of the Canadian Wheat Board are borne by the grain producers collectively. Some assistance is received by them from the Federal Treasury to cover part of the cost of storing wheat in commercial positions, i.e., off the farm. (See note on the Temporary Wheat Reserves Act.)

The Canadian Wheat Board has permanent offices in Winnipeg, Vancouver, Montreal, London (England) and Tokyo. The Board uses the established grain export companies as their selling arm, on an agency basis. They have 25 firms which act as their shippers and exporters via the Lakehead and eastern route, and 17 firms via the Pacific Coast ports.

The Canadian Wheat Board has no assets of its own. It has no funds. It retains no profits. The money to pay for the wheat, durum, oats, and barley delivered by the producers is obtained by borrowing from the chartered banks. The cost of this money is borne by the producers. Nor does the Board own or operate grain handling, storage or transportation facilities. It contracts with the licensed primary elevator operators to act as buying and forwarding agents.

The object of the Board is to market grain in an orderly manner. Their marketing function is limited to interprovincial and export trade. Grain marketed intraprovincially does not come under the Wheat Board's jurisdiction, although it does extend to all elevators, flour mills, feed mills, feed warehouses and seed cleaning mills.

Cabinet appoints an eleven-member Advisory Committee, of which at least six members represent wheat producers.

Cabinet has the authority to direct the Board as to the manner in which it is to conduct its operations, but in practice the Board has operated with a great deal of autonomy.

Elevators are operated for and on behalf of the Board. Only Board agents may operate an elevator, unless the Board excepts that elevator from the provisions of the Canadian Wheat Board Act.

The Wheat Board has the authority to limit individual producers' deliveries of grain. This is accomplished in a routine fashion by the issuing of permit books and by the fixing of delivery quotas at specified delivery points, together with some special delivery quotas for selected grain.

Only the producer of the grain is permitted to deliver grain to an elevator. (Producer includes the actual producer and any person entitled as the landlord, vendor or mortgagee, to the grain).

Bona fide grain producers are entitled to have a permit book issued to them by the Board. The actual producer of the grain has the prior right to possession of the permit book. Only one permit book may be issued per farm unit. Where there are two or more producers entitled to the grain from a farm unit, none can deliver in excess of his proper share of the delivery quota.

Only producers who are permit book holders may deliver grain to a licensed elevator and then only to one of the two delivery points named in the individual's permit book. Normally the producer chooses the delivery point, but the Wheat Board does have the authority to prescribe the delivery point.

The quantity of grain delivered must not exceed the quota established at the time of delivery for the kind of grain being delivered and for the point stipulated. A record of all deliveries must be entered in the permit book.

Provided all the Board's orders and regulations have been complied with, the Board must buy all the wheat, durum, oats, and barley offered by a bona fide producer. The Board must pay the appropriate initial payment on delivery. Normally this is done by the elevator operator, acting on behalf of the Board. He is recompensed for all his costs when the grain is delivered to the Board at a terminal or mill elevator.

A record of the grain delivered and the payment is entered into an accounting pool, along with all the other grain of like kind and grade delivered in the same crop year. Each producer participating in the pool shares in the equitable distribution of the pool surplus. The accounting pool period coincides with the crop year.

Only grain that has been taken into an elevator in accordance with the Wheat Board's orders and regulations may be loaded into a railway car.

The Wheat Board has the authority to order grain, by grade, to be loaded out of any elevator into railway cars or lake vessels. Thus, grain is shipped out of the primary country elevators according to the shipping orders issued by the Board to its agents, the elevator operators. The Board also has the authority to prohibit the movement of any kind of grain out of an elevator. The Board can allocate railway cars to specific persons or elevators at specific delivery points. However, in the normal course of events it refrains from becoming so specific, preferring to allocate shipping orders and cars en masse to its agents for movement out of elevators situated on specified loading blocks.

Nowadays only the grain that is produced in the "designated area" comes under the jurisdiction of the Canadian Wheat Board. This is most of the grain produced in Canada, of course. The designated area comprises all of Manitoba, Saskatchewan and Alberta plus the Peace River Block and the Creston-Wynndel areas, both in British Columbia, and a small area in the Rainy River region of Ontario near the Manitoba border.

After the Wheat Board has received payment for the wheat, durum, oats and barley delivered to the Board's respective pools, a distribution of the balance remaining in the accounts after deduction of all charges against the grains is made in the form of a final payment. This cheque is mailed to the producers from the Board six to nine months after the pool has been closed for deliveries at the end of the crop year. The amount per bushel of the final payment depends on the grade of the grain, and on the prices obtained by the Board.

The Canadian Wheat Board has the authority to prohibit the export from or import into Canada of any wheat, durum, oats, barley or the products thereof. Likewise it can prohibit the transport of these grains

from one province in Canada to another. Indeed, only the Board is permitted to contract these grains for sale anywhere other than the province of origin of the grain. The Board may grant licences for the export or import of wheat, durum, oats or barley, as well as for the transport of these grains across provincial boundaries.

Temporary Wheat Reserves Act, Statutes of Canada 1956 Ch. 2

This Act was passed by the Federal Parliament in 1956. As explained by the Minister of Trade and Commerce at the time, it was in lieu of a two-price system.

The legislation gave the Federal Government the responsibility for payment of both the storage and bank interest costs for 365 days on those Canadian Wheat Board holdings of wheat and durum in excess of 178 million bushels that happen to be in commercial (i.e., off-farm) storage at opening of business on the first day of each crop year, i.e., August 1. The rates paid per bushel are those prevailing on the last day of the previous crop year, i.e., July 31.

The purpose of the Act is to relieve the Canadian Wheat Board, and thus the Western wheat producers, from the burden of paying carrying costs on abnormally large stocks of wheat and durum. Without the Act the Wheat Board might be forced into panic methods of disposing of this grain, in violation of their duty to market wheat in an orderly manner.

The Federal Treasury makes monthly payments to the Canadian Wheat Board of one-twelfth of the amount of the carrying charges on the excess stocks. This total is prorated in the accounting pools and is eventually paid out to producers as part of the final payment.

If at the beginning of a crop year the Board's stocks of wheat and durum are not more than 178 million bushels, then no more payments are to be made for that or any subsequent crop year. In other words, the Temporary Wheat Reserves Act would be null and void. Thus, to that extent, the act is a temporary one.

National Transportation Act, Revised Statutes of Canada 1970 Ch. N-17

The National Transportation Act became law in 1967 with the declared credo that "an economic and efficient transportation system, making the best use of all available modes of transportation at the lowest total cost, is essential to protect the interests of the users of transportation and to maintain the economic well-being and growth of Canada ...".

The Act established the Canadian Transport Commission and dissolved the Board of Transport Commissioners for Canada. Under the new Commission several committees were established. The one that has an impact on grain production and marketing in Western Canada is known as the Railway Transport Committee. There are seventeen commissioners, five of whom serve on this latter committee.

The commissioners are appointed by the Federal Cabinet. They and their staff are government employees, and their salaries are paid by the Federal Treasury.

The Commission administers the Railway Act. It has the authority to regulate and licence any mode of transport in Canada, including control over rates and tariffs charged and the administering of transport subsidies voted by Parliament.

Any person may apply to the Commission for permission to appeal a rate set by a carrier, if he believes that the effect of the rate would be prejudicial to the public interest. If, following a hearing, the Commission concurs, it may make an order requiring the carrier to remove the prejudicial feature of the rate. At such a hearing representatives of provincial or municipal governments and of shippers or consignees are entitled to appear.

The greatest impact of the National Transportation Act on the grain production and marketing system stems from the provisions covering the abandonment of uneconomic branch lines. Branch line includes all subsidiary, secondary, local or feeder lines of railway. Segments of branch lines may also be applied for.

The Commission sets the rules governing the filing of abandonment applications and the determination of whether or not the branch line in the application is indeed eligible for abandonment on economic grounds.

The Commission holds public hearings on the question of abandonment of the branch line to hear all persons who wish to present their views. On the basis of the application and the hearing, the Commission determines whether or not the branch line is uneconomic, is likely to continue to be uneconomic and whether the line should be closed down or remain open. Only lines that have incurred an actual operating loss in the last accounting year may be given permission to cease operating.

A hearing can cover several applications at the same time if the branch lines in question are in the same or adjoining areas. The Commission has the authority to determine the order in which applications may be considered, although it may request the submitting railway company to specify its preferred order.

In determining whether or not a branch line may be abandoned, the Commission considers, among other factors, the public interest; the actual losses incurred; the alternative transportation facilities; the adjustment period required; the disruption to the economy of the communities and the area; the effect on other lines and other carriers; the feasibility of maintaining the line or any part of it by, a) changing the method of operation, b) inter-connecting with another line, c) sale or lease of the line or part of it to another railway company, d) exchanging running rights, e) constructing connecting lines with lines of another company; the known or potential resources of the area; the seasonal restrictions on other forms of transport; and the future transportation needs of the area.

When the Commission decides that a branch line or segment ought to be abandoned, it sets a closing date between one month and five years following the date of the abandonment order. The railway company must cease its operation of that line on the specified date.

When the Commission is not satisfied that the line ought to be abandoned it orders the railway to continue its operation but reconsiders the abandonment application periodically in the light of new conditions that may emerge.

The Commission may recommend to the railway companies the rationalization of their lines through the exchange of branch lines between companies, through the exchange of running rights on other lines and through the connecting of lines of rival companies, even though no application for abandonment has been filed on the lines in question. The Commission may also recommend to the rail companies that applications for abandonment of branch lines be filed.

Where the Commission has determined that a branch line is indeed uneconomic but the line continues to operate, the railway company is entitled to claim for the actual loss accruing to that line in each fiscal year. The Commission in such cases must examine the figures in the claim and recommend to the Minister of Finance that the rail company in question be paid the verified amount of the loss.

Cabinet may designate specific branch lines that are not permitted to be abandoned during set periods. This was done for the so-called protected lines that may not be closed before January 1, 1975. If losses are incurred in the operation of such lines the rail company may claim for the losses, even though no application has been filed. The claim may be paid, on the recommendation of the Commission.

The National Transportation Act again makes statutory the rail freight rates on grain set by the "Act to Authorize a Subsidy for a Railroad through the Crows Nest Pass" S.C. 1897 Ch. 5. For the first time it makes statutory the rail freight rates on grain moving from prairie points to the Pacific Coast ports and Churchill, for export, at the levels prevailing on December 31, 1966. These rates now require an Act of Parliament to be changed. Before the National Transportation Act was passed the export freight rates to the Pacific were set by an order of the Board of Transport Commissioners and the level of these rates was established having regard to the Crows Nest rates on grain moving eastward to the Lakehead.

APPENDIX

Communities Other Than Grain Delivery Points in the Rosthern Region

While this series of reports is primarily concerned with communities that serve as grain collection points, an attempt is also made to at least be aware of other social and economic entities or activities in a given region. One such entity is the community that is not a grain delivery point.

Generally it has been found that a list of all past and present grain delivery points in a given area accounted for all communities present. This, however, was not the case in the Rosthern region.

Table A.1 lists 11 non-grain-delivery points in the Rosthern area with several characteristics about each. Other place names of settlements or points of local interest can be found on a map but all of them have a population of less than ten people. Nine of the 11 communities reflect ethnic origins related to the German Mennonite people who first settled in the area during the 1920's. Indeed, this ethnic character also predominates many of the grain delivery points in the study area.

Martensville sprang up more recently. Its location, some ten miles north of Saskatoon on the former No. 11 highway, probably explains in large measure its rapid development.

In the context of rail line and grain handling rationalization, it is significant that none of the 11 communities listed are located on a rail line, and none have ever had a country elevator. Yet they exist and continue to serve at least some of the needs of people in the locality.

TABLE A.1 COMMUNITIES OTHER THAN GRAIN DELIVERY POINTS IN THE ROSTHERN REGION

Community	Class or Legal Status	Population 1969	Location R.M.	Post Office 1970-71
Blumenheim	H	64	344. Corman Park	N.P.O.
Blumenthal	H(O)	40	403. Rosthern	N.P.O.
Greenfeld	H	100	404. Laird	N.P.O.
Gruenthal	H	115	403. Rosthern	N.P.O.
Hochstadt	H	43	403. Rosthern	N.P.O.
Lily Plain	H	75	463. Duck Lake	C/s. 30/9/69
Martensville	T[a]	870[b]	344. Corman Park	Rev. $3,359.00
Neuanlage	H	115	403. Rosthern	N.P.O.
Neuhorst	H(O)	133	344. Corman Park	N.P.O.
Rheinland	H	38	344. Corman Park	N.P.O.
Wingard	H	75	463. Duck Lake	C/s. 14/8/70

C/s. - Closed day/month/year
H - unorganized hamlet with population of more than 10
H(O) - organized hamlet
N.P.O. - no record of ever having had a post office
Rev. - postal revenue during fiscal year 1970-71
T - incorporated town

[a]Martensville incorporated as a village Sept. 1/66 and incorporated as a town Jan. 1/69.
[b]As of June 1/72.

Source: Directory of Hamlets and Settlements, 1969, Saskatchewan Department of Municipal Affairs, Regina.
Canada Post Office Department, Saskatoon.

Hospital Services in the Study Area

Three public hospitals are located in the study area; namely, one in Rosthern and two in Prince Albert. Table A.1 shows the rated bed size, number of inpatients treated per year and the estimated number of people served by each hospital. In 1966 the total population in the study area was 47,101 (Table 1.6). The apportioned population served in 1966 by the three hospitals was estimated to be 46,763.

TABLE A.2 HOSPITAL SERVICES IN THE STUDY AREA

Year	Rated Bed Size[a]	Inpatients Treated[b]	Apportioned Population[c]
Rosthern, Rosthern Union Hospital			
1963	36	1,636	7,754
1964	36	1,589	7,830
1965	36	1,520	7,016[d]
1966	36	1,419	6,930
1967	36	1,342	6,773
1968	36	1,268	6,424
1969	36	1,360	6,691
1970	36	1,309	6,476
1971	36	1,332	6,328
Prince Albert, Holy Family Hospital			
1963	150	3,225	16,730
1964	150	3,826	17,796
1965	150	4,119	19,059
1966	150	4,043	19,179
1967	150	4,017	19,960
1968	150	4,462	21,602
1969	150	4,630	23,414
1970	150	4,507	21,817
1971	152	4,563	20,619
Prince Albert, Victoria Union Hospital			
1963	180	4,573	22,407
1964	180	4,292	19,816
1965	180	4,270	20,287
1966	180	4,208	20,594
1967	180	3,995	20,558
1968	180	3,684	18,469
1969	135	3,274	16,937
1970	228	3,978	19,654
1971	228	4,580	20,907

[a]The maximum number of beds which, according to the Sask. Department of Health, should be set up in the hospital based on local need combined with physical facilities.

[b]The number of inpatient separations by discharge or death during the year.

[c]For a given hospital, rural municipality and calendar year, the apportioned population is calculated by dividing the number of municipal residents discharged from the given hospital by the total number of discharges from all Saskatchewan public hospitals of persons from the given municipality, multiplied by the total population of the municipality. This is said to be the population served by the hospital.

[d]Adjusted for utilization and average length of stay by sex and age group.

Source: Saskatchewan Hospital Services Plan, Department of Health, Regina, Saskatchewan.

Chronology of Government Legislation, Court Rulings, Board Orders, Regulations, etc., Having an Impact on Production and Marketing of Grain in Western Canada

1872	Dominion Land Act S.C. 1872, C.6.
1876	First export of wheat from the Prairies.
1878	St. Paul Railway entered Winnipeg.
1881	First elevator built in Western Canada.
1881	Canadian Pacific Railway completed between Fort William and Winnipeg.
1882	First cargo of wheat left the Lakehead (Fort William).
1883	First elevator built at the Lakehead (Port Arthur).
1885	First all-Canadian rail link (Canadian Pacific) between the Prairies and Pacific Coast opened.
1887	Formation of the Winnipeg Grain Exchange.
1897	An Act to authorize a subsidy for a Railroad through the Crows Nest Pass S.C. 1897, C.5. (Crows Nest Freight rates on western grain moving to Fort William).
1899	Royal Commission on the Shipment and Transportation of Grain.
1900	Manitoba Grain Act S.C. 1900, C.39.
1904	Building of the Western portion of the Grand Trunk Pacific to Prince Rupert. (Completed 1912).
1904	Grain Inspection Act S.C. 1904, C.15.
1905	Introduction of Marquis Wheat.
1906	Royal Commission on the Grain Trade in Canada.
1908	Winnipeg Grain Exchange reformed to become an unincorporated voluntary association.
1911	Act creating the Saskatchewan Co-operative Elevator Company.
1912	Canada Grain Act S.C. 1912, C.27. et seq.
1912	First Canadian Government Elevator opened, at Port Arthur.

1914 First Canadian Government Interior Terminal Elevators opened, at Moose Jaw and Saskatoon.

1915 Panama Canal opened.

1916 First Canadian Government Elevator on the Pacific Coast opened.

1916 United Grain Growers formed from amalgamation of three grain growers associations and the Alberta Farmers' Co-op Elevator Company.

1917 Board of Grain Supervisors P.C. 1917-1552 (to June 6, 1919).

1919 Soldiers Settlement Act S.C. 1919, C.19, et seq.

1919 Canadian Wheat Board Act S.C. 1919, C.9 (to 1922).

1923 Royal Grain Inquiry Commission P.C. 1923-774.

1923 Prairie Wheat Pools formed.

1925 Major revision of the Canada Grain Act.

1928 Select Standing Committee of the House of Commons dealt with the grading of wheat by protein content.

1929 Hudson Bay Railway completed to Port Churchill.

1929 Welland Ship Canal expanded and modernized.

1929 Prairie Provincial Governments guaranteed bank loans to the three Wheat Pools.

1930 Dominion Government provided financial assistance to the banks and the provincial governments covering grain loans.

1930 Mr. John I. McFarland appointed by the Federal Government as general manager of the Canadian Co-operative Wheat Producers' Ltd.

1930 Revision of the Canada Grain Act S.C. 1930, C.5. et seq.

1931 Prairie Wheat Pools separated from their Central Selling Agency the Canadian Co-operative Wheat Producers Ltd.

1931 An Act Respecting Wheat S.C. 1931, C.60. (5¢ freight subsidy).

1931 Commission to Inquire into Trading in Grain Futures P.C. 1931-853.

1931 Grain Marketing Act S.S. 1931, C.87 (100% pool).

1931 First shipment of wheat through Port Churchill.

1932 Ottawa Economic Conference - Canada obtained preference on wheat in British market.

1933 United States legislation, the Agricultural Adjustment Act; parity prices established.

1933 Commodity Credit Corporation established in U.S.A.

1933 London Wheat Conference and subsequent International Wheat Agreement.

1934 Farmers' Creditors Arrangement Act S.C. 1934, C.53.

1934 Natural Products Marketing Act S.C. 1934, C.57.

1934 Natural Products Marketing Act ruled ultra vires of the Dominion Government by the Supreme Court of Canada.

1934 Emergency Wheat Control Act S.M. 1934, C.48.

1935 Prairie Farm Rehabilitation Act S.C. 1935, C.23 et seq.

1935 Canadian Wheat Board Act S.C. 1935, C.53 et seq.

1936 Royal Grain Inquiry Commission P.C. 1936-1577.

1938 Canada-United States trade agreement (abrogated British preference on Canadian Wheat).

1939 Agricultural Products Co-operative Marketing Act S.C. 1939, C.28 et seq.

1939 Grain Futures Act S.C. 1939, C.31.

1939 Prairie Farm Assistance Act S.C. 1939, C.50 et seq.

1939 Canadian Wheat Board opened Eastern office in Toronto.

1940 First implementation of delivery quota system of control over western grain marketing.

1941 Wheat Acreage Reduction P.C. 1941-3047.

1941 Feed Freight Assistance Regulation P.C. 1941-7523. et seq.

1942 Wheat Acreage Reduction Act S.C. 1942, C.10.

1942 Veterans Land Act S.C. 1942-43, C.33. et seq.

1943 Wheat Futures Trading discontinued on the Winnipeg Grain Exchange; Canadian Wheat Board made exclusive marketing agency for wheat.

1944 Farm Improvement Loans Act S.C. 1944, C.41. et seq.

1944 Agricultural Prices Support Act S.C. 1944, C.29.

1944 Canadian Wheat Board Act amended to exempt the Board from authority in marketing Eastern Wheat P.C. 1944-5640.

1945 The Food and Agriculture Organization of the United Nations Act, S.C. 1945, C.4. et seq.

1946 United Kingdom Wheat Agreement.

1948 Canadian Wheat Board empowered to control interprovincial movement of wheat products.

1948 International Wheat Agreement (No. 1) P.C. 1948-1016.

1949 Manitoba Coarse Grain Marketing Control Act R.S.M. 1954, C.41.

1949 Saskatchewan Grain Marketing Act R.S.S. 1953, C.241.

1949 Alberta Coarse Grain Marketing Control Act S.A. 1949, C.25.

1949 Marketing of oats and barley brought under the Canadian Wheat Board.

1951 Appropriations Act No. 2 S.C. 1951, C.2, provided for a grant of $65 million to the 1945-49 Pool as settlement to Western grain producers for participation in the United Kingdom Wheat Agreement.

1951 St. Lawrence Seaway Authority Act S.C. 1951, C.24. et seq.

1951 Prairie Grain Producers Interim Financing Act S.C. 1951, C.20. et seq.

1952 Extension of Colombo Plan to wheat aid.

1953 International Wheat Agreement (No. 2) P.C. 1953-556.

1953 Application of accelerated depreciation for income tax purposes to commercial grain storage facilities.

1954 Canada-Japan trade agreement extended M.F.N. rates to Japan and opened Japanese market to Canadian grain.

1954 Inauguration of United States Public Law 480.

1955 Churchill elevator capacity doubled.

1955 GATT resolution on surplus disposal.

1956 Canada-USSR trade agreement extended M.F.N. rates to U.S.S.R., which government agreed to buy 1.2 million tons of Canadian Wheat.

1956 First shipment of flour to United Nations Relief and Works Agency.

1956 Prairie Grain Producers Interim Financing Act, S.C. 1956, C.1.

1956 Temporary Wheat Reserves Act S.C. 1956, C.2.

1956 International Wheat Agreement (No. 3) P.C. 1953-734.

1957 Prairie Grain Advance Payments Act S.C. 1957, C.2.

1957 Establishment of FAO Group on Grains.

1957 Agricultural Stabilization Act S.C. 1957, C.22. Succeeded the Agricultural Prices Support Act.

1957 Treaty of Rome established the European Common Market.

1958 First time that the Canadian Wheat Board failed to make a final payment (Oats Pool, 1956-57).

1958 Grain Farmers march on Ottawa.

1958 Western Grain Producers Acreage Payment Regulations P.C. 1958-1442.

1958 Bracken Enquiry into the Distribution of Railway Boxcars P.C. 1958-181.

1959 Supreme Court upheld the Board of Transport Commissioners' ruling that demurrage charges on boxcars is permitted at terminal elevators after ten days.

1959 Cabinet suspended Board of Transport Commissioners' ruling on demurrage.

1959 International Wheat Agreement (No. 4) P.C. 1959-480.

1959 Formal institution of Canada-United States Quarterly Meetings on wheat and related matters.

1959 Food for Peace Conference (Wheat Utilization Committee).

1959 Bracken formula for boxcar allocation instituted.

1959 St. Lawrence Seaway opened.

1959 Canadian Wheat Board pricing policy changed to take advantage of new freight conditions consequent on St. Lawrence Seaway opening.

1959 Crop Insurance Act S.C. 1959, C.42 et seq. Crop Insurance Test Areas Act S.M. 1959, C.14; the Saskatchewan Crop Insurance Act S.S. 1960, C.57.

1959 Royal Commission on Transportation P.C. 1959-577.

1960 Prairie Grain Provisional Payments Act S.C. 1960, C.2.

1960 Prairie Grain Loans Act S.C. 1960, C.1.

1960 Freedom from Hunger campaign.

1960 Western Grain Producers Acreage Payment Regulations, 1960.

1960 Addition of Title IV to United States Public Law 480.

1960 Canadian Wheat Board instituted off-quota feed mill policy.

1961 Railway Act amended to include rapeseed as a grain.

1961 Report of the Royal Commission on Transportation (MacPherson) recommended branch line abandonment and subsidy to cover losses on grain transport.

1961 Agricultural Rehabilitation and Development Act S.C. 1961, C.30.

1961 Sale of wheat to China under long term credits negotiated by the Canadian Wheat Board.

1962 EEC Ministerial decision implemented the Common Agricultural Policy.

1962 Western Grain Producers Acreage Payment Regulations, 1962.

1962 Extension of U.S.A. Title IV P.L. 480 provisions to the private grain trade.

1962 Canadian dollar value fixed at exchange rate of 92 1/2¢ vis-a-vis the U.S. dollar.

1962 Introduction of the European Common Market Grain Regulations, including the import levy system.

1962 International Wheat Agreement (No. 5) P.C. 1962-631.

1963 Inauguration of the World Food Program.

1963 World Food Congress (Freedom from Hunger) Washington, June.

1963 Winter Storage Subsidy on feed grain in Eastern elevators paid by Federal government.

1963 Sale of 250 million bushels of wheat to U.S.S.R.

1964 Kennedy Round of tariff reductions began, under the General Agreement on Tariff and Trade.

1964 Minimum Import Price system applied in the United Kingdom.

1964 Export Flour Adjustment policy discontinued by the Canadian Wheat Board.

1964 Canadian Wheat Board Headquarters Building expanded.

1965 International Wheat Agreement extended by protocol for one year, without amendment.

1965 Asian wheat production exceeded two billion bushels for the first time.

1965 Grain Transportation Committee formed.

1966 International Wheat Agreement again extended by protocol for one year to July 31, 1967.

1966 Winter Storage Subsidy on feed grain in Eastern elevators cancelled.

1966 National Transportation Act S.C. 1966-67, C. 69. An Act to define and implement a national transportation policy for Canada.

1966 Livestock Feed Assistance Act S.C. 1966, C.52. Canadian Livestock Feed Board established.

1967 Price and quantity obligations under the International Wheat Agreement ceased; administrative provisions extended until June 30, 1968.

1967 Federal Treasury guaranteed price equivalent of $1.95 1/2 basis No. 1 Northern, Lakehead, on Canadian Wheat Board sales of wheat.

1967 International Grains Arrangement negotiated under the Kennedy Round and a special Rome Conference.

1968 Canada Grains Council formed.

1968 International Grains Arrangement came into effect July 1. World prices dropped below the arranged minimums; Canadian prices held.

1968 Prairie Grain Advance Payments Act amended to double the payment rate and to provide advances to cover cost of drying grain.

1969 Canadian prices dropped below the IGA arranged minimums.

1969 Canadian Wheat Board selling prices to Canadian buyers for domestic use held at the $1.95 1/2 equivalent level. Two price system.

1969 Block Loading System instituted by the Canadian Wheat Board as a method of calling forward desired kinds and grades of grain.

1970 Canadian dollar unpegged.

1970 Boden Committee reviewed and reported on the delivery quota system for Western Canadian grain.

1970 Canadian Wheat Board inaugurated quota system aimed at making deliveries more selective and market-oriented, and at keeping adequate working space in country elevators.

1970 Wheat and Barley pools (1968-69) failed for the first time to make a final payment, and for the second time there was no final payment on an Oats pool (1968-69).

1970 Federal Government Wheat Acreage Reduction Program (Operation LIFT) in effect; wheat plantings down 50%.

1970 Delivery quota regulations changed to eliminate the unit quota and to move from specified acreage quota to seeded acreage (except for wheat) plus assigned acreage. Each permit holder allowed two delivery points.

1971 Quota regulations again changed to a completely assignable acreage base, and terminable quotas introduced.

1971 Canada Grain Act S.C. 1970-71, C.7; replaced the Board of Grain Commissioners for Canada with the Canadian Grain Commission.

1971 Prairie Grain Advance Payments Act amended.

1972 The three Prairie Wheat Pools purchased Federal Grain Ltd.

1972 Manitoba Coarse Grain Marketing Commission established.

1972 Alberta Grain Commission established.

1972 Canadian Government Elevators inland terminals made alternate delivery points to all permit holders.

INVENTAIRE DES TERRES DU CANADA
POSSIBILITÉS AGRICOLES DES SOLS

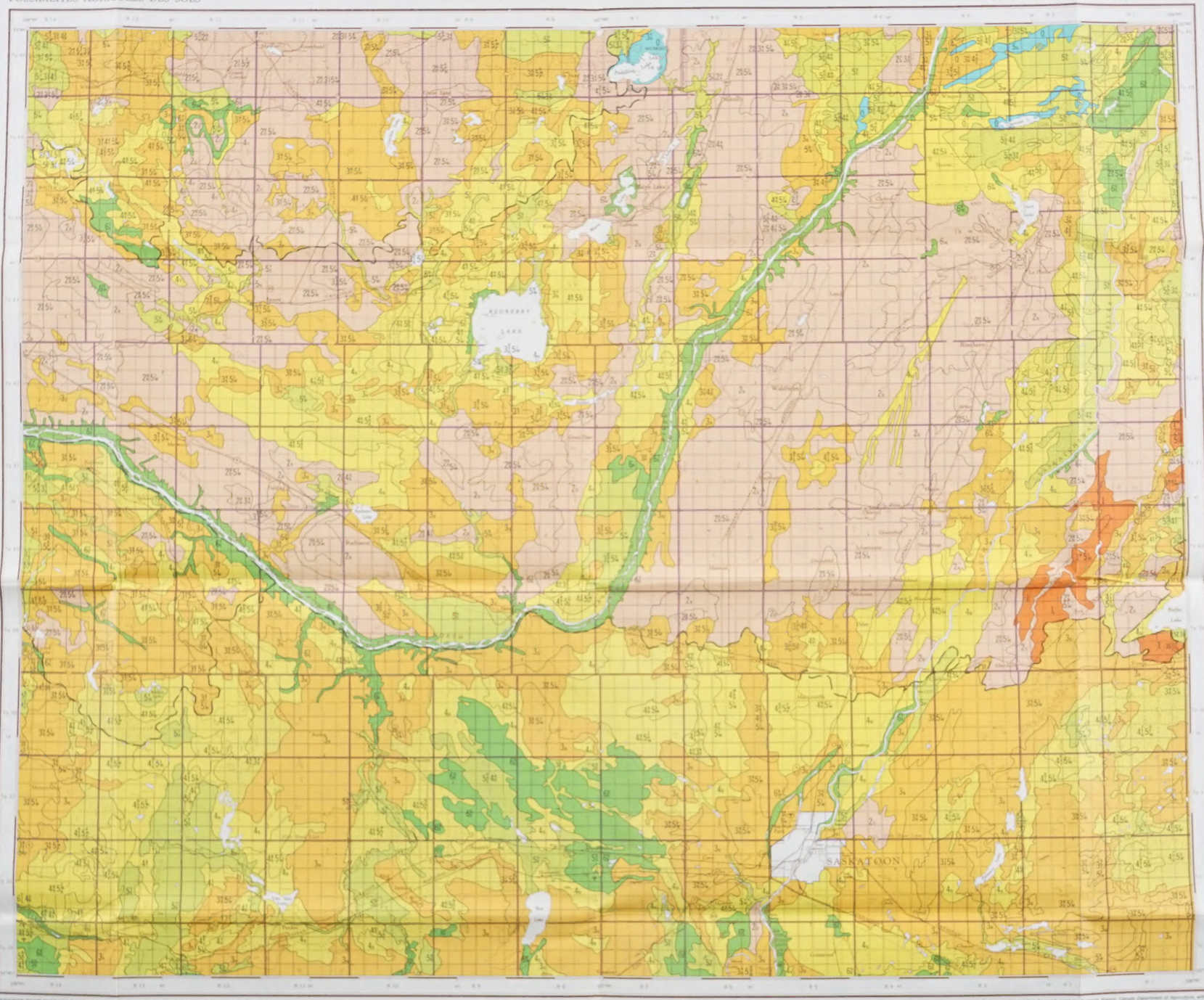
CANADA LAND INVENTORY
SOIL CAPABILITY FOR AGRICULTURE

SASKATOON

SASKATCHEWAN

WEST OF THIRD MERIDIAN — OUEST DU TROISIÈME MÉRIDIEN

Scale 1:250,000 Echelle



LÉGENDE

La présente méthode de classement groupe les sols minéraux en sept classes, d'après les renseignements contenus dans les relevés pédologiques. Les sols des classes 1, 2, 3 et 4 sont considérés aptes à la production continue des récoltes de grande culture, ceux des classes 5 et 6 ne convenant qu'aux plantes fourragères vivaces et ceux de la classe 7 ne convenant à aucune de ces productions.

Le classement repose sur les postulats suivants.

- Le travail du sol et les récoltes se font à l'aide de la machinerie moderne.
- Le terrain qui nécessite des améliorations, by compris la défrichement, que l'exploitant peut exécuter lui-même, est classé selon les limitations ou les risques que ces utilisations pourront entraîner après ces améliorations.
- Le terrain qui nécessite des améliorations dépassant les capacités de l'exploitant lui-même est classé d'après les limitations actuelles.
- On ne tient pas compte de la distance aux marchés, de la qualité des routes, de l'emplacement ou de l'étendue des exploitations, du mode de faire valoir, des systèmes de culture, de l'habileté ou des ressources des exploitants, ni des dommages que des tempêtes pourraient causer aux récoltes.

Le classement ne tient pas compte des aptitudes des sols pour la production d'arbres, l'établissement de vergers, la culture de petits fruits et de plantes d'ornement, la récréation et la faune.

Les classes sont fondées sur l'intensité plutôt que sur la genre des limitations imposées dans l'utilisation des sols pour des fins agricoles.

Chaque classe comprend plusieurs sortes de sols, dont certains, dans une même classe, exigent une gestion et des traitements différents.

CLASSE 1 SOLS NE COMPORTANT AUCUNE LIMITATION IMPORTANTE DANS LEUR UTILISATION POUR LES CULTURES.

Ces sols sont profonds, bien ou imparfaitement drainés, ils retiennent bien l'eau et, s'il est nécessaire, ils sont bien pourvus d'éléments nutritifs. Les travaux de culture et d'entretien sont faciles. Une bonne gestion permet d'en obtenir une productivité élevée à moyennement élevée pour un choix étendu de grandes cultures.

CLASSE 2 SOLS COMPORTANT DES LIMITATIONS QUI RESTREIGNENT QUELQUE PEU LE CHOIX DES CULTURES OU IMPOSENT DES PRATIQUES MODÉRÉES DE CONSERVATION.

Ces sols sont profonds et retiennent bien l'eau; leurs inconvénients sont semblables à ceux de la classe 1 et peuvent avec un entretien de difficulté faible à moyenne être cultivés avec une productivité variant de moyennement élevée à élevée pour un choix passablement grand de cultures.

CLASSE 3 SOLS COMPORTANT DES LIMITATIONS MODÉRÉMENT GRAVES QUI RESTREIGNENT LE CHOIX DES CULTURES OU IMPOSENT DES PRATIQUES SPÉCIALES DE CONSERVATION.

Les sols de cette classe ont des limitations plus graves que ceux de la classe 2. Elles touchent une ou plusieurs des pratiques suivantes: temps et facilité d'exécution des travaux de préparation du sol, ensemencement et entretien, choix des cultures et méthodes de conservation. Bien exploités, ces sols ont une productivité passable ou moyennement élevée pour un assez grand choix de cultures.

CLASSE 4 SOLS COMPORTANT DE GRAVES LIMITATIONS QUI RESTREIGNENT LE CHOIX DES CULTURES OU IMPOSENT DES PRATIQUES SPÉCIALES DE CONSERVATION.

Les limitations dont cette classe est l'objet entravent gravement une ou plusieurs des pratiques suivantes: temps et facilité d'exécution des travaux de préparation du sol, ensemencement et entretien, choix des cultures et méthodes de conservation. Les sols sont bons ou passablement productifs pour un choix inconsidérable d'autres de cultures, mais ils peuvent avoir une productivité élevée pour une culture spécialement adaptée.

CLASSE 5 SOLS QUI SONT L'OBJET DE LIMITATIONS TRÈS GRAVES EN CE QU'ELLES EMPÊCHENT QU'A LA PRODUCTION DE PLANTES FOURRAGÈRES VIVACES, MAIS SUSCEPTIBLES D'AMÉLIORATION.

Les sols de cette classe ont des limitations tellement graves qu'ils ne peuvent convenir à la production soutenue de plantes cultivées de grande culture. Ils peuvent produire des plantes fourragères vivaces, soit indigènes, soit cultivées, et ils peuvent être améliorés par l'emploi des machines agricoles. Les principaux d'améliorations peuvent comprendre la défrichement, les façons culturales, l'ensemencement, la fertilisation, ou l'aménagement des eaux.

CLASSE 6 SOLS QUI SONT L'OBJET DE LIMITATIONS TRÈS GRAVES, PARTOUT À PRODUIRE D'AUTRES PLANTES QUE DES PLANTES FOURRAGÈRES VIVACES ET NON SUSCEPTIBLES D'AMÉLIORATION.

Ces sols fournissent aux animaux de ferme une certaine pâturage soutenue, mais leurs limitations sont tellement graves qu'il n'est guère pratique de chercher à les améliorer à l'aide des machines agricoles, sauf parce que le terrain ne se prête plus à l'emploi de ces machines ou que le sol ne réagit pas convenablement aux travaux d'amélioration, soit encore parce que la période de pousse est très courte.

*** CLASSE 7** SOLS INUTILISABLES SOIT POUR LA CULTURE SOIT POUR LES PLANTES FOURRAGÈRES VIVACES.

Cette classe comprend aussi les étendues de roc nu, toute autre superficie désécrivine de sol et les étendues d'eau trop petites pour figurer sur les cartes.

O SOLS ORGANIQUES (Non indiqués dans la partie de classement)

SOUS-CLASSES

À l'exception de la classe 1, les classes sont subdivisées en sous-classes d'après une ou plusieurs de sept limitations reconnues. Ces sous-classes sont les suivantes.

SOUS-CLASSE C: climat défavorable—La principale limitation est soit la basse température, soit la faible précipitation ou sa mauvaise répartition au cours de la période de végétation ou un ensemble de ces facteurs.

SOUS-CLASSE E: dommages par l'érosion—Les dommages causés antérieurement par l'érosion limitent l'utilisation du terrain pour l'agriculture.

* SOUS-CLASSE I: inondation—Les crues des cours d'eau et des lacs limitent l'utilisation du terrain pour l'agriculture.

SOUS-CLASSE P: pierrosité—Les pierres nuisent aux travaux de préparation du sol, d'ensemencement et de récolte.

* SOUS-CLASSE R: sol mince sur roche consolidée—La roche consolidée se trouve à moins de trois pieds de la surface.

SOUS-CLASSE S: caractéristiques défavorables du sol—Présence d'une ou de plusieurs des caractéristiques défavorables suivantes: mauvaise structure, perméabilité restreinte, développement des racines gêné à cause de la nature du sol, faible fertilité naturelle, faible pouvoir de rétention d'eau, salinité.

SOUS-CLASSE T: relief défavorable—Le dénivelé ou le modelé du terrain limite l'utilisation pour l'agriculture.

SOUS-CLASSE W: excès d'humidité—L'utilisation pour l'agriculture est limitée par la présence d'un excès d'eau provenant de causes autres que l'inondation, soit mauvais drainage, plan d'eau élevé, infiltration et nécessitant d'excès d'entretient d'ouvrages anti-érosionnels.

SOUS-CLASSE X: sols ayant l'objet d'une limitation modérée, causée par l'effet combiné de plusieurs caractéristiques défavorables dont chacune prise séparément n'est pas assez grave pour modifier le classement.

SYMBOLES

Les deux chiffres indiquent les classes de possibilités.

Les petits chiffres placés à la droite d'un numéro de classe indiquent la proportion dans laquelle cette classe est présente sur un total de 10. Les lettres placées à la suite des numéros de classe indiquent les sous-classes, c'est-à-dire les limitations.

* Indique une classe ou une sous-classe que ne figure pas sur la présente carte.

EXEMPLES

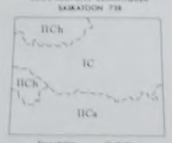
4T Désigne une superficie de classe 4 dont les limitations sont dues au relief et à la pierrosité.

2T4S Désigne une superficie de classe 2, avec limitation due au relief, et de classe 4, avec limitations dues à la pierrosité. Tiers et quatre dixièmes respectivement la teneur dans les proportions de 1:3.

N.B. La teinte utilisée pour toute superficie est déterminée par la première chiffre de symbole. Pour les superficies comprenant deux ou trois classes, la classe dominante est indiquée la première. Cependant, pour les superficies comprenant deux classes de terres arables (1-4) et une classe non arable (5-7), les classes arables apparaissent les premières et leurs proportions combinées forment ou dépassent 8/10.

Cette teinte (appliqué 8/10), les superficies comprenant plus d'une classe, sauf lorsque les proportions sont de 8/2, 8/1 ou 9/1.

SOUS-RÉGIONS CLIMATIQUES
SASKATOON 738



Sous-région	Limitation
I	Aucune
II	Modérée
III	Modérément grave
IV	Grave
V	Très grave
Ca	Due à l'aridité
Ch	Due au froid

DESCRIPTIVE LEGEND

In this classification the mineral soils are grouped into seven classes on the basis of soil survey information. Soils in classes 1, 2, 3 and 4 are considered capable of continued use for cultivated field crops, those in classes 5 and 6 only for perennial forage crops and those in class 7 for neither.

Some of the important factors on which the classification is based are:

- The soils will be well managed and cropped under a largely mechanized system.
- Land clearing improvements, including clearing, that can be made economically by the farmer himself is classed according to its limitations or hazards in use after the improvements have been made. Land requiring improvements beyond the capacity of the farmer himself is classed according to its present condition.
- The following are not considered: distance to market, kind of roads, condition of roads, type of holding, methods of farming, skill or resources of individual operators, and hazard of crop damage by storms.

The classification does not include capability of soils for trees, map units, small holes, permanent pasture, recreation, or wildlife.

The classes are based on intensity, rather than kind, of main limitations for agriculture. Each class includes many kinds of soil, and soils of one soils in any class require similar management and treatment.

CLASS 1 SOILS IN THIS CLASS HAVE NO SIGNIFICANT LIMITATIONS IN USE FOR CROPS.

The soils are deep, are well to imperfectly drained, hold moisture well, and in the crops soils were well supplied with plant nutrients. They can be managed and cropped with relative ease and under good management they are moderately high to high in productivity for a fairly wide range of crops.

CLASS 2 SOILS IN THIS CLASS HAVE MODERATE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE MODERATE CONSERVATION PRACTICES.

The soils are deep and hold moisture well. The limitations are moderate and the soils can be managed and cropped with little difficulty. Under good management they are moderately high to high in productivity for a fairly wide range of crops.

CLASS 3 SOILS IN THIS CLASS HAVE MODERATELY SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES.

The limitations are more severe than for Class 2 soils. They affect one or more of the following practices: timing and ease of tillage, planting and harvesting, choice of crops, and conservation practices. Under good management they are fair to moderately high in productivity for a fair range of crops.

CLASS 4 SOILS IN THIS CLASS HAVE SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES, OR BOTH.

The limitations seriously affect one or more of the following practices: timing and ease of tillage, planting and harvesting, choice of crops, and conservation practices. The soils are fair to good in productivity for a fair range of crops but may have high productivity for a specially adapted crop.

CLASS 5 SOILS IN THIS CLASS HAVE VERY SEVERE LIMITATIONS THAT RESTRICT THEIR CAPABILITY TO PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE FEASIBLE.

The soils are so severely that the soils are not capable of use for sustained production of annual field crops. The soils are capable of producing native or tame species of perennial forage plants, and may be improved by use of farm machinery. The improvement practices may include clearing of bush, cultivation, seeding, fertilizing, or water control.

CLASS 6 SOILS IN THIS CLASS ARE CAPABLE ONLY OF PRODUCING PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE NOT FEASIBLE.

The soils provide some sustained grazing for farm animals, but the limitations are so severe that improvement by use of farm machinery is impractical. The terrain may be unsuitable for use of farm machinery, or the soils may not respond to improvement, or the growing season may be very short.

*** CLASS 7** SOILS IN THIS CLASS HAVE NO CAPABILITY FOR ARABLE CULTURE OR PERMANENT PASTURE.

This class also includes rockland, other soil-and areas, and bodies of water too small to show on the maps.

O ORGANIC SOILS (Not placed in capability classes)

SUBCLASSES

Excepting Class 1, the classes are divided into subclasses on the basis of kinds of limitation. The subclasses are as follows:

SUBCLASS C: adverse climate — The main limitation is low temperature or low or poor distribution of rainfall during the growing season, or a combination of these.

SUBCLASS E: erosion damage — Past damage from erosion limits agricultural use of the land.

* SUBCLASS I: inundation — Flooding by streams or lakes limits agricultural use.

SUBCLASS P: stoniness — Stones interfere with tillage, planting, and harvesting.

* SUBCLASS R: shallowness to solid bedrock — Solid bedrock is less than three feet from the surface.

SUBCLASS S: soil limitations — Limitations include one or some of the following: undesirable structure, low permeability, a restricted rooting zone because of soil characteristics, low natural fertility, low moisture-holding capacity, salinity.

SUBCLASS T: adverse topography — Either steepness or the pattern of slopes limits agricultural use.

SUBCLASS W: excess water — Excess water other than from flooding limits use for agriculture. The excess water may be due to poor drainage, a high water table, seepage, or runoff from surrounding areas.

SUBCLASS X: Soils having a moderate limitation caused by the combine effect of two or more adverse characteristics which, singly are not serious enough to affect the class rating.

CONVENTIONS

Large arabic numerals denote capability classes.

Small arabic numerals placed after a class numeral give the approximate proportion of the class unit as a total of 10. Letters placed after class numerals denote the subclasses i.e. limitations.

* Denotes class or subclass not present on this map.

EXAMPLES

An area of Class 4 land with topography and moisture 4T

limitations is named thus:

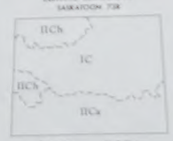
An area of Class 2 land with topography, texture, and Class 4 with excessive limitation, in the proportions of 7/3 is shown 2T4X

thus:

N.B. The colour used for a complex area is determined by the first digit of the symbol. Generally the dominant class appears first in a digit of the symbol. However, in consideration of two arable classes (1-4) and one non-arable class (5-7), the arable classes are shown first if they total 8/10 or more of the map unit.

This pattern is overprinted on the colour to complex areas, except those having ratios of 8/2, 8/1 and 9/1.

CLIMATIC SUBREGIONS
SASKATOON 738



Subregion	Limitation
I	None
II	Moderate
III	Moderately severe
IV	Severe
V	Very severe
Ca	Due to aridity
Ch	Due to coldness

SASKATOON 738